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OCEANS AND ENCLOSED SEAS: A STUDY IN
ANTHROPO-GEOGRAPHY.*

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The water of the earth's surface, viewed from the standpoint of anthropo-geography, is one, whether it appears as atmospheric moisture, spring, river, lake, brackish lagoon, enclosed sea-basin or open ocean. Its universal circulation, from the falling of the dew to the vast sweep of ocean current, causes this inviolable unity. Variations in the geographical forms of water are superficial and constantly changing; they pass into one another by almost imperceptible gradations, shift their unstable outlines at the bidding of the mobile, restless element. In contrast to the land, which is marked by diversity of geologic structure and geographic form, the world of water is everywhere approximately the same, excepting only the difference in the mineral composition of sea water as opposed to that of spring and stream. Therefore, wherever man has touched it, it has moulded him in much the same way, given the same direction to his activities, dictated the use of the same implements and methods of navigation. As maritime trader or colonist, he has sailed to remote, unknown, yet familiar, coasts, and found himself as much at home as on his native shores. He has built up maritime empires, the centre of whose dominion, race and commerce, falls somewhere in the dividing yet uniting sea.

Man must be grouped with the air and water as part of the mobile envelope of the earth's surface. The mobility which maintains the unity of air and water has caused the unity of the human race. Abundant facilities of dispersal often give animal forms a wide or

* Read before the Association of American Geographers, Chicago, December 31, 1907.

cosmopolitan distribution. Man, by appropriating the mobile forces in the air and water to increase his own powers of locomotion, has become a cosmopolitan being, and made the human race reflect the unity of atmosphere and hydrosphere.

Always the eternal unrest of the moving waters has knocked at the door of human inertia to arouse the sleeper within; always the flow of stream and the ebb of tide have sooner or later stirred the curiosity of the land-born barbarian about the unseen destination of these marching waters. Rivers by the mere force of gravity have carried him to the shores of their common ocean, and placed him on this highway of the world. Then from his sea-girt home, whether island or continent, he has timidly or involuntarily followed the track which headland-dotted coast, or ocean current, or monsoon, or trade wind marked out for him across the pathless waters, so that at the gray dawn of history he appears as a cosmopolite, occupying every part of the habitable earth.

These sporadic oversea wanderings, with intervals of centuries or millenniums between, opened to his occupancy strange and remote lands, in whose isolation and new environment he developed fresh variations of mind, body and cultured achievements, to arm him with new weapons in the struggle for existence. The sea which brought him bars him for a few ages from his old home, till the tradition of his coming even is lost. Then with higher nautical development, the sea loses its barrier nature; movements of people and trade recross its surface to unite those who have been long severed and much differentiated in their mutual remoteness. The ensuing friction and mingling weed out the less fit variations of each, and combine in the new race the qualities able to fortify a higher type of man. Not only seas and oceans, but also mountains and deserts serve to isolate the migrant people who once has crossed them; but wastes of water raise up the most effective barriers.

The transformation of the ocean into a highway by the development of navigation is a late occurrence in the history of man and is perhaps the highest phase of his adaptation to environment, because an adaptation which has placed at his disposal that vast water area constituting three-fourths of the earth's surface from which he had previously been excluded. Moreover, it was adaptation to an alien and hostile element, whose violent displays of power recurrently stimulated the human adjustment between attack and defense. Because adaptation to the sea has been vastly more difficult than to the land, commensurate with the harder struggle it has brought greater

intellectual and material rewards. To this conquest of the sea must be assigned a peculiarly high place in history, because it has contributed to the union of the various peoples of the world, has formed a significant part of the history of man, whether that history is economic, social, political or intellectual. Hence history has always staged its most dramatic acts upon the margin of seas and oceans; here always the plot thickens and gives promise of striking and tremendous development. Rome of the seven hills pales before England of the "Seven Seas."

Universal history loses half its import, remains an aggregate of parts, fails to yield its significance as a whole, if it does not continually take into account the unifying factor of the seas. Indeed, no history is entitled to the name of universal unless it includes a record of human movements and activities on the ocean, side by side with those on the land. Our school text-books in geography present a deplorable hiatus, because they fail to make a definite study of the oceans over which man explores and colonizes and trades, as well as the land on which he plants and builds and sleeps.

The striking fact about the great world ocean to-day is the manifold relations which it has established between the dwellers on its various coasts. Marine cables, steamer and sailing routes combine to form a dense network of paths across the vast commons of the deep. Over these the commercial, political, intellectual, or even purely migrant activities of human life move from continent to continent. The distinctive value of the sea is that it promotes many-sided relations as opposed to the one-sided relation of the land. France on her eastern frontier comes into contact with people of kindred stock, living under similar conditions of climate and soil to her own; on her maritime border she is open to intermittent intercourse with all continents and climes and races of the world. To this sea border must be ascribed the share that France has taken in the history of North and South America, the West Indies, Northern and Equatorial Africa, India, China and the South Seas. So we find the great maritime peoples of the world, from the Phœnicians to the English, each figuring in the history of the whole world of its day, and helping weave into a web of universal history the stories of its various parts.

Man's normal contact with the sea is registered in his nautical achievements. If we enquire *where* the highest native efficiency in the art of navigation was attained before the spread of Mediterranean and European civilization, we find that this distinction be-

longs to the great island world of the Pacific and to the neighbouring lands of the Indian Ocean. Sailing vessels and outrigger boats of native design and construction characterize the whole sea-washed area of Indo-Malaysian civilization from Hindustan to the outermost isles of the Pacific. The eastern rim of Asia, also, belongs to this wide domain of nautical efficiency, and the coast Indians of southern Alaska and British Columbia may possibly represent an eastern spur of the same,* thrown out in very remote times and maintained by the advantageous geographic conditions of that indented, mountainous coast. Adjoining this area on the north is the long-drawn Arctic seaboard of the Eskimo, who unaided have developed in their sealskin kayak and bidarka sea-going craft unsurpassed for the purposes of marine hunting and fishing, and who display a fearlessness and endurance born of long and enforced intimacy with the deep. Driven by the frozen deserts of his home to seek his food chiefly in the water, the Eskimo, nevertheless, finds his access to the sea barred for long months of winter by the jagged ice-pack banked up along the shore.

The highest degree of intimacy is developed in that vast island-strewn stretch of the Pacific constituting Oceania.† Here where a mild climate enables the boatman race to make a companion of the deep, where every landscape is a sea-scape, where every diplomatic visit or war campaign, every trading journey or search for new coco-palm plantation means a voyage beyond the narrow confines of the home island, there dwells a race whose splendid chest and arm muscles were developed in the gymnasium of the sea; who, living on a paltry 515,000 square miles (1,320,300 square kilometres) of scattered fragments of land, but roaming over an ocean area of twenty-five million square miles, are not more at home in their palm-wreathed islets than on the encompassing deep. Migrations, voluntary and involuntary, make up their history. Their trained sense of locality, enabling them to make voyages several hundred miles from home, has been mentioned by various explorers in Polynesia. The Marshall Islanders set down their geographical knowledge in maps which are fairly correct as to bearings but not as to distances. The Ralick Islanders of this group make charts which include islands, routes and currents.‡ Captain Cook was deeply impressed by the geographical knowledge of the people of the South

* Ratzel, *History of Mankind*, vol. I, pp. 153-154; vol. II, pp. 91, 100. London, 1896-1898.

† Ratzel, *History of Mankind*, vol. I, pp. 166-170. London, 1896-1898.

‡ Captain Winkler, *Sea Charts Formerly Used in the Marshall Islands*, Smithsonian Report for 1899, translated from the *Marine Rundschau*, Berlin, 1898.

Seas. A native Tahitian made for him a chart containing 74 islands, and gave an account of nearly 60 more.* Information and directions supplied by natives have aided white explorers to many discoveries in these waters. Quiros, visiting the Duff Islands in 1606, learned the location of Ticopia, one of the New Hebrides group, three hundred miles away. Not only the excellent seamanship and the related pelagic fishing of the Polynesians bear the stamp of their predominant water environment; their mythology, their conception of a future state, the germs of their astronomical science, are all born of the sea.

Though the people living on the uttermost boundaries of this island world are 6,000 miles (or 10,000 kilometres) apart, and might be expected to be differentiated by the isolation of their island habitats, nevertheless they all have the same fundamental characteristics of physique, language and culture from New Guinea to Easter Isle, reflecting in their unity the oneness of the encompassing ocean over which they circulate.†

Midway between these semi-aquatic Polynesians and those Arctic tribes who are forced out upon the deep, struggle with it rather than associate with it, we find the inhabitants of the Mediterranean islands and peninsulas, who are favored by the mild climate and the tideless, fogless, stormless character of their sea. While such a body of water lures to intimacy, it does not breed a hardy or bold race of navigators; it is a nursery, scarcely a severe training school. Therefore we find that, except the far-famed Dalmatian sailors, who for centuries have faced the storms sweeping down from the Dinaric Alps over the turbulent surface of the Adriatic, Mediterranean seamanship does not command general confidence on the high seas. Therefore it is the German, English and Dutch steamship lines that are to-day the chief ocean carriers from Italian ports to East Africa, Asia, Australia, North and South America, despite the presence of native lines running from Genoa to Buenos Ayres, Montevideo and New York; just as it was the Atlantic states of Europe, and only these and all of these, except Germany, who, trained to venture out into the fogs and storms and unmarked paths of the *mare tenebrosum*, participated in the early voyages to the Americas. One after the other they came—Norwegians, Spaniards, Portuguese, English, French, Dutch, Swedes and Danes. The anthro-geographical principle is not invalidated by the fact that Spain and England were

* Captain James Cook, *Journal of First Voyage round the World*, pp. 70, 105, 221, 230. Edited by W. J. L. Wharton, London, 1893.

† Ratzel, *History of Mankind*, vol. I, pp. 161, 174. London, 1896-1898.

guided in their initial trans-Atlantic voyages by Italian navigators, like Columbus, Cabot and Amerigo Vespucci. The long maritime experience of Italy and its commercial relations with the Orient, reaching back into ancient times, furnished abundant material for the researches and speculations of such practical theorists; but Italy's location fixed the shores of the Mediterranean as her natural horizon, narrowed her vision to its shorter radius. Her obvious interest in the preservation of the old routes to the Orient made her turn a deaf ear to plans aiming to divert European commerce to trans-Atlantic routes. Italy's entrance upon the high seas was, therefore, reluctant and late, retarded by the necessity of outgrowing the old circumscribed outlook of the enclosed basin before adopting the wider vision of the open ocean. Venice and Genoa were crippled not only by the discovery of the sea route to India, but also by their adherence to old thalassic means and methods of navigation inadequate for the high seas. However, these Mediterranean sea folk are being gradually drawn out of their seclusion, as proved by the increase of Italian oceanic lines and the recent installation of an Hellenic steamship line between Piræus and New York.

The size of a sea or ocean is a definite factor in the power of a body of water to lure or repel maritime ventures, especially in the earlier stages of nautical development. A broken, indented coast means not only a longer and broader zone of contact between the inhabitants and the sea; it means also the breaking up of the adjacent expanse of water into so many alcoves, in which fisherman, trader and colonist may become at home, and prepare for maritime ventures farther afield. The enclosed or marginal sea lures earlier because it can be compassed by coastwise navigation; then by the proximity of its opposite shores and its usual generous equipment with islands, the next step to crosswise navigation is encouraged. For the earliest stages of maritime development, only the smaller articulations of the coast and the inshore fringe of sea inlets count. This is shown in the primitive voyages of the Greeks, before they had ventured into the Euxine or west of the forbidding Cape Malia; and in the "inside passage" navigation of the Indians of southern Alaska and British Columbia, who have never stretched their nautical ventures beyond the outermost rocks of their skerry-walled coast.

A second stage is reached when an enclosed basin is at hand to widen the maritime horizon, and when this larger field is fully exploited in all its commercial, colonial and industrial possibilities, as was done by the Phœnicians and Greeks in the Mediterranean, the

Hansa Towns in the Baltic, the Dutch and English in the North Sea. The third and final stage is reached when the nursery of the inshore estuary or gulf and the training school of the enclosed basin are in turn outgrown, and the larger maritime spirit moves on to the open ocean for its field of operation.* It is a significant fact that the Norse, bred to the water in their fiords and channels behind their protecting "skerry-wall," then trained in the stormy basins of the North and Irish Seas, were naturally the first people of Europe to cross the Atlantic; because the Atlantic of their shores, narrowing like all oceans and seas towards the north, assumes almost the character of an enclosed basin. The distance from Norway to Greenland is only 1,800 miles, little more than that across the Arabian Sea between Africa and India. We trace, therefore, a certain analogy between the physical subdivisions of the world of water into inlet, marginal sea and ocean, and the anthro-geo-geographical gradations in maritime development.

The enclosed or marginal sea seems a necessary condition for the advance beyond coastwise navigation and the much later step to the open ocean. Continents without them, like Africa except for its northern face upon the Mediterranean and the Red Sea, have shown no native initiative in maritime enterprise. Africa was further cursed by the mockery of desert coasts along most of her scant thalassic front. In the Americas, we find the native races compassing a wide maritime field only in the Arctic, where the fragmentary character of the continent breaks up the ocean into Hudson's Bay, Davis Strait, Baffin Bay, Gulf of Boothia, Melville Sound and Bering Sea; and in the tropical Mediterranean of the Caribbean Sea and Gulf of Mexico. The excellent seamanship developed in the archipelagoes of southern Alaska and Chile remained abortive for maritime expansion, despite a paucity of local resources and the spur of hunger, owing to the lack of a marginal sea; but in the Caribbean basin, the Aruaks and later the Caribs spread from the southern mainland as far as Cuba.*

Enclosed or marginal seas are historically the most important subdivisions of the ocean prior to 1492. Apart from the widening of the maritime horizon which they give to their bordering people, each has the further advantage of constituting an area of close vicinal grouping and constant interchange of cultural achievements, by which the civilization of the whole basin tends to become elevated and unified. This unification frequently extends to race also, owing to the rapidity of maritime expansion and the tendency to ethnic

* Hans Helmolt, *History of the World*, vol. I, pp. 188-189, 193-195. New York, 1902-1906.

amalgamation characteristic of all coast regions. We recognize an area of Mediterranean civilization from the Isthmus of Suez to the Sacred Promontory of Portugal, and in this area a long-headed, brunette Mediterranean race, clearly unified as to stock, despite local differentiations of culture, languages and nations in the various islands, peninsulas and other segregated coastal regions of this sea.* The basin appears therefore as an historical whole; for in it a certain group of peoples concentrated their common efforts, which crossed and criss-crossed from shore to shore. Phoenicia's trade ranged westward to the outer coasts of Spain, and later Barcelona's maritime enterprises reached east to the Levant. Greece's commercial and colonial relations embraced the Crimea and the mouth of the Rhone, and Genoa's extended east to the Crimea again. The Saracens, on reaching the Mediterranean edge of the Arabian peninsula, swept the southern coasts and islands, swung up the western rim of the basin to the foot of the Pyrenees, and taught the sluggish Spaniards the art of irrigation practiced on the garden slopes of Yemen. The ships of the Crusaders from Venice, Genoa and Marseilles anchored in the ports of Mohammedanized Syria, brought the symbol of the cross back to its birthplace in Jerusalem, but carried away with them countless suggestions from the finished industries of the East. Here was give and take, expansion and counter-expansion, conquest and expulsion, all together making up a great sum of reciprocal relations embracing the whole basin, the outcome of that close geographical connection which every sharply defined sea establishes between the coasts which it washes.

The same thing has come to pass in the North Sea. Originally Celtic on its western or British side, as opposed to its eastern or Germanic coast, it has been wholly Teutonized on that flank also from the Strait of Dover to the Firth of Tay, and sprinkled with Scandinavian settlers from the Firth of Tay northward to Caithness.† The eleventh century saw this ethnic unification achieved, and the end of the Middle Ages witnessed the diffusion of the elements of a common civilization through the agency of commerce from Bruges to Bergen. The Baltic, originally Teutonic only on its northern and western shores, has in historical times become almost wholly Teutonic, including even the seaboard of Finland and much of the coast provinces of Russia.‡ Unification of civilization

* W. L. Ripley, *The Races of Europe*, pp. 128-130, 270-273, 387-390, 407, 444, 448. New York, 1899. G. Sergi, *The Mediterranean Race*, pp. 20-37. New York, 1901.

† H. J. Mackinder, *Britain and the British Seas*, pp. 189-190. London, 1904.

‡ Sydow-Wagner *Schul-Atlas, Völker und Sprachenkarten*, No. 13. Gotha, 1905. A. Leroy-Beaulieu, *The Empire of the Tsars*, map p. 80.

attended this unification of race. In its period of greatest historical significance from the 12th to the 17th century, the Baltic played the rôle of a northern Mediterranean. The countless shuttles of the Hanse ships wove a web of commercial intercourse between its remotest shores. Novgorod and Abö were in constant communication with Lubeck and Stralsund;* and Wisby, on the island of Gotland at the great crossroads of the Baltic,† had the focal significance of the Piræus in ancient Ægean trade.

If we turn to Asia, we find that even the unfavorable polar location of Bering Sea has, nevertheless, been unable to rob it entirely of historical significance. This is the one spot where a native American race has transplanted itself by its own natural expansion to Asiatic shores. The circular rim and island-dotted surface have guided Eskimo settlements to the coast of the Chukchen Peninsula, where they have become partly assimilated in dress and language to the local Chukchees.‡ The same conditions also facilitated the passage of a few Chukchees across Bering Strait to the Alaskan side. At Pak (or Peek) on East Cape and on Diomed Island, situated in the narrowest part of Bering Strait, are the great intercontinental markets of the polar tribes. Here American furs have for many decades been exchanged for the reindeer skins of northern Siberia and Russian goods from far-away Moscow.§ Only the enclosed character of the sea, reported by the Danish explorer Vitus Bering, tempted the land-bred Russians, who reached the north-western coast of Siberia at the middle of the 18th century, to launch their leaky boats of unseasoned timber, push across to the American continent, and make this whole Bering basin a Russian sea;|| just as a few decades before, when land exploration of Kamchatka had revealed the enclosed character of the Sea of Okhotsk, the Russian pioneers took a straighter course across the water to their Pacific outpost of Petropavlovsk near the southern end of the peninsula. But even before the coming of the Slavs to its shores, the Sea of Okhotsk seems to have been an area of commercial and ethnic intercourse from the Amur River in Siberia in a half circle to the east, through Sakhalin, Yezo, the Kurile Islands and southern Kamchatka,¶ noticeably where the rim of the basin presented the scantiest supply

* E. C. Semple, *The Development of the Hanse Towns in Relation to their Geographical Environment*, Bull. Amer. Geographical Soc., vol. XXXI, No. 3, 1899.

† Helen Zimmern, *The Hansa Towns*, pp. 24-25, 54-55. New York, 1895.

‡ Nordenskiöld, *The Voyage of the Vega*, pp. 565, 588, 591. New York, 1882.

§ *Ibid.*, pp. 375, 403, 405, 487, 563.

|| Agnes Laut, *Sea Voyages of the Northern Ocean*, Harper's Monthly, January, 1906.

¶ Ratzel, *History of Mankind*, vol. III, pp. 446, 449, 450. London, 1896-1898.

of land and where, therefore, its meagre resources had to be eked out by fisheries and trade on the sea.

The vicinal location about an enclosed basin produces more rapidly a unification of race and culture, when some ethnic relationship and affinity already exists among the peoples inhabiting its shores. As in the ancient and mediæval Mediterranean, so in the Yellow Sea of Asia, the working of this principle is apparent. The settlement along its coasts of divergent but kindred peoples like the Chinese, Koreans and Japanese, allowed these to be easily assimilated to a Yellow Sea race and to absorb quickly any later infusion, like that of the Tatars and Manchus. China, by reason of its larger area, long-drawn coast, massive population, and early civilization, was the dominant factor in this basin; Korea and Japan were its culture colonies—a fact that justifies the phrase calling “China the Rome of the Far East.” Historical Japan began on the island of Kiu-siu, facing the Yellow Sea. Like Korea, it derived its writing, its fantastic medical notions, its industrial methods, some features of its government administration, its Buddhism and its religion of Confucius from the people about the lower Hoangho.* Three centuries ago Japan had its colonies on Korean soil, and for purposes of piracy and smuggling penetrated far up the rivers of China. Korea has kept in touch with China by an active trade and diplomatic relations through the centuries.

But to-day China is going to school to Japan. Since Japan renounced her policy of seclusion forty years ago along with her antiquated form of government, and since Korea has been forced out of her hermit life, the potency of vicinal location around this enclosed sea has been suddenly restored. The enforced opening of the treaty ports of Japan, Korea and China simply prepared the way for this basin to reassert its power to unite, and to unite now more closely and effectively than ever before, under the law of increasing territorial areas. The stimulus was first communicated to the basin from without, from the trading nations of the Occident and that new-born Orient rising from the sea on the California shores. Japan has responded most promptly and most actively to these over-sea stimuli, just as England has, of all Europe, felt most strongly the reflex influences from trans-Atlantic lands. The awakening of this basin has started, therefore, from its seaward rim; its star has risen in the east. It is in the small countries of the world that such stars rise. The compressed energies of Japan, stirred by over-sea

* *Ibid.*, vol. III, pp. 443, 444.

contact and an improved government at home, have overleaped the old barriers and are following the lines of slight resistance which this land-bound sea affords. Helped by the bonds of geographical conditions and of race, she has begun to convert China and Korea into her culture colonies. The on-looking world feels that the ultimate welfare of China and Korea can be best nurtured by Japan, which will thus pay its old debt to the Middle Kingdom.

Despite the fact that China's history has always had a decidedly inland character, that its political expansion has been landward, that it has practiced most extensively and successfully internal colonization, and that its policy of exclusion has tended to deaden its outlook towards the Pacific, nevertheless China's direct intercourse with the west and its westward-directed influence have never, in point of significance, been comparable with that towards the east and south. Here a succession of marginal seas offered easy water-paths dotted with way stations to their outermost rim in Japan, the Philippines and remote Australia. About the South China Sea, the Gulf of Siam, the Sulu, Celebes, and Java Seas, the coastal regions of the outlying islands have for centuries received Chinese goods and culture, and a blend of that obstinately assertive Chinese blood.

The strength of these influences has decreased with every increase of distance from the indented coasts and teeming, seafaring population of South China, and with every decrease in race affinity. They have left only faint traces on the alien shores of far-away Australia. The divergent ethnic stock of the widespread Malay world has been little susceptible to these influences, which are therefore weak in the remoter islands, but clearly discernible on the coasts of the Philippines,* Borneo, the nearer Sunda Islands, and the peninsula of Malacca, where the Chinese have had trading colonies for centuries.† But in the eastern half of Farther India, which is grouped with China by land as well as by sea, and whose race stock is largely if not purely Mongolian, these influences are very marked, so that the whole continental rim of the South China Sea, from Formosa to the Isthmus of Malacca, is strongly assimilated in race and culture. Tongking, exposed to those modifying influences which characterise all land frontiers, as well as to coastwise intercourse, is in its people and civilization merely a transcript of China. The coast districts and islands of Annam are occupied by Chinese as far as the hills of Cambodia, and the name of Cochin China points to the origin of its predominant population. One-sixth of the inhabitants

* Census of the Philippine Islands, 1903, vol. I, pp. 318-320, 478, 481-495.

† Hans Helmolt, *History of the World*, vol. II, pp. 544-545. New York, 1905.

of Siam are Chinese, some of whom have filtered through the northern border; Bangkok, the capital, has a large Chinese quarter. The whole economic life and no small part of the intellectual life of the eastern face of Farther India as far as Singapore is centered in the activity of the Chinese.*

The historical significance of an enclosed sea basin depends upon its zonal location and its location in relation to the surrounding lands. We observe a steady decrease of historical importance from south to north through the connected series of the Yellow, Japan, Okhotsk, Bering Seas and the Arctic basin, miscalled ocean. The far-northern location of the Baltic, with its long winters of ice-bound ports and its glaciated lands, retarded its inclusion in the field of history, curtailed its important historical period, and reduced the intensity of its historical life, despite the brave, eager activity of the Hanseatic League. The Mediterranean had the advantage, not only of a more favorable zonal situation, but of a location at the meeting place of three continents and on the line of maritime traffic across the eastern hemisphere from the Atlantic to the Pacific.

These advantages it shares in some degree with the Indian Ocean, which, as Ratzel justly argues, is not a true ocean, at best, only half an ocean. North of the Equator, where it is narrowed and enclosed like an inland sea, it loses the hydrospheric and atmospheric characteristic of a genuine ocean. Currents and winds are disorganized by the close-hugging lands. Here the steady northeast trade wind is replaced by the alternating air currents of the northeast and southwest monsoons, which at a very early date enabled merchant vessels to break away from their previous slow, coastwise path, and to strike a straight course on their voyages between the east coast of Africa and India.† Moreover, this northern half of the Indian Ocean looks like a larger Mediterranean with its southern coast removed. It has the same east and west series of peninsulas harbouring differentiated nationalities, the same northward running recesses, but all on a larger scale. It has linked together the history of Asia and Africa; and by the Red Sea and Persian Gulf, it has drawn Europe and the Mediterranean into its sphere of influence. At the western corner of the Indian Ocean a Semitic people, the Arabs of Oman and Yemen, here first developed brilliant maritime activity, like their Phœnician kinsmen of the Lebanon seaboard. Similar geographic conditions in their home regions and a nearly similar intercontinental location combined to make them the middlemen of two or three con-

* Ratzel, *History of Mankind*, vol. III, pp. 407-412. London, 1896-1898.

† Bunbury, *History of Ancient Geography*, vol. II, pp. 351, 470, 471. London, 1883.

tinents. Just as the Phœnicians, by way of the Mediterranean, reached and roused slumberous north Africa into historical activity and became the medium for the distribution of Egypt's culture, so these Semites of the Arabian shores knocked at the long-closed doors of east Africa facing on the Indian basin, and drew this region into the history of southern Asia. Thus the Africa of the enclosed seas was awakened to some measure of historical life, while the Africa of the wide Atlantic slept on.

From the dawn of history the northern Indian Ocean was a thoroughfare. Alexander the Great's rediscovery of the old sea route to the Orient sounds like a modern event in relation to the gray ages behind it. Along this thoroughfare Indian colonists, traders, and priests carried the elements of Indian civilization to the easternmost Sunda Isles, and Oriental wares, sciences and religions moved westward to the margin of Europe and Africa. The Indian Ocean produced a civilization of its own, with which it colored a vast semi-circle of land reaching from Java to Abyssinia, and more faintly, owing to the wider divergence of race, the further stretch from Abyssinia to Mozambique.

Thus the northern Indian Ocean, owing to its form, its location in the angle between Asia and Africa and the latitude where, round the whole earth, "the zone of greatest historical density" begins, and especially its location just southeast of the Mediterranean as the eastern extension of that great maritime track of ancient and modern times between Europe and China, has been involved in a long series of historical events. From the historical standpoint, prior to 1492 it takes a far higher place than the Atlantic and Pacific, owing to its nature as an enclosed sea.* But like all such basins, this northern Indian Ocean attained its zenith of historical importance in early times. In the 16th century it suffered a partial eclipse, which passed only with the opening of the Suez Canal. During this interval, however, the Portuguese, Dutch and English had rounded the Cape of Good Hope and entered this basin on its open or oceanic side. By their trading stations, which soon traced the outlines of its coasts from Sofala in South Africa around to Java, they made this ocean an alcove of the Atlantic, and embodied its events in the Atlantic period of history. It is this open or oceanic side which differentiates the Indian Ocean physically, and therefore historically, from a genuine enclosed sea.

The limitation of every enclosed or marginal sea lies in its small

* For a full discussion of the Indian Ocean, see Hans Helmolt, *History of the World*, vol. II, pp. 580-584, 602-610. New York, 1904-1907.

area and in the relatively restricted circle of its bordering lands. Only small peninsulas and islands can break its surface and short stretches of coast combine to form its shores. It affords, therefore, only limited territories as goals for expansion, restricted resources and populations to furnish the supply and demand of trade. What lands could the Mediterranean present to the colonial outlook of the Greeks comparable to the North America of the expanding English or the Brazil of the Portuguese? Yet the Mediterranean as a colonial field had great advantages in point of size over the Baltic, which is only one-sixth as large (2,509,500 and 431,000 square kilometres respectively), and especially over the Red Sea and Persian Gulf, whose effective areas were greatly reduced by the aridity of their surrounding lands. But the precocious development and early cessation of growth marking all Mediterranean national life have given to this basin a variegated history; and in every period and every geographical region of it, from ancient Phœnicia through the Roman Empire to modern Italy, the early exhaustion of resources and dwarfing of ideals which characterize small areas become more and more conspicuous. The history of Sweden, Denmark and the Hanse Towns in the Baltic, and of Yemen on the Red Sea tells the same story, the story of a hothouse plant, forced in germination and growth, then stifled in the close air.

Growth demands space. Therefore, the progress of history has been attended by an advance from smaller to larger marine areas, with a constant increase in those manifold relations between peoples and lands which the water is able to establish. Every great epoch of history has had its own sea, and every succeeding epoch has enlarged its maritime field. The Greek had the *Ægean*, the Roman the whole Mediterranean, to which the Mediæval made an addition in the North Sea and the Baltic. The modern period has had the Atlantic, and the 20th century is now entering upon the final epoch of the World Ocean. The gradual inclusion of this World Ocean in the widened scope of history has been due to the expansion of European peoples, who, for the past twenty centuries, have been the most far-reaching agents in the making of universal history. Owing to the location and structure of their continent, they have always found the larger outlet in a western sea. In the south the field widened from the Phœnician Sea to the *Ægean*, then to the Mediterranean, on to the Atlantic, and across it to its western shores; in the north it moved from the quiet Baltic to the tide-swept North Sea and across the North Atlantic. Only the South Atlantic

brought European ships to the great world highway of the South Sea, and gave them the choice of an eastern or western route to the Pacific. Every new voyage in the age of discovery expanded the historical horizon; and every improvement in the technique of navigation has helped to eliminate distance and reduced intercourse on the World Ocean to the time-scale of the ancient Mediterranean.

It would be a mistake, however, to suppose that the larger size of the oceanic horizon has meant a corresponding increase in the content and importance of history. Such an intense, concentrated national life as occurred in those little Mediterranean countries in ancient times is not duplicated now, unless we find a parallel in Japan's recent career in the Yellow Sea basin. There was something as cosmic in the colonial ventures of the Greeks to the wind-swept shores of the Crimea or barbarous wilds of Massilia, as in the establishment of English settlements on the brimming rivers of Virginia or the torrid coast of Malacca. The inner significance of Alexander's conquest of the Asiatic rim of the Mediterranean and Rome's political unification of the basin does not lose in comparison with the Russification of northern Asia and the establishment of the British Empire.

The ocean has always performed one function in the evolution of history; it has always provided the outlet for the exercise of redundant national powers. The abundance of opportunity which it presents to these disengaged energies depends upon the size, location and other geographic conditions of the bordering lands. These opportunities are limited in an enclosed basin, larger in the oceans, and largest in the northern halves of the oceans, owing to the widening of all land-masses towards the north and the consequent contraction of the oceans and seas in the same latitudes.

A result of this grouping is the abundance of land in the northern hemisphere, and the vast predominance of water in the southern, by reason of which these two hemispheres have each assumed a distinct rôle in history. The northern hemisphere offers the largest advantages for the habitation of man, and significantly enough, contains a population five times that of the southern hemisphere. The latter, on the other hand, with its vast, unbroken water areas, has been the great oceanic highway for circum-mundane exploration and trade. This great water girdle of the South Seas had to be discovered before the spherical form of the earth could be established. In the wide territory of the northern hemisphere civilization has experienced an uninterrupted development, first in the Old World,

because this offered in its large area north of the Equator the fundamental conditions for rapid evolution; then it was transplanted with greatest success to North America. The northern hemisphere contains, therefore, "the zone of greatest historical density," from which the track of the South Seas is inconveniently remote. Hence we find in recent decades a reversion to the old east-west path along the southern rim of Eurasia, now perfected by the Suez Canal, and to be extended in the near future around the world by the union of the Pacific with the Caribbean Sea at Panama; so that finally the northern hemisphere will have its own circum-mundane waterway, along the line of greatest intercontinental intercourse.

The size of the ocean as a whole is so enormous, and yet its various subdivisions are so uniform in their physical aspect, that their differences of size produce less conspicuous historical effects than their diversity of area would lead one to expect. A voyage across the 177,000 square miles (453,500 square kilometres) of the Black Sea does not differ materially from one across the 979,000 square miles (2,509,500 square kilometres) of the Mediterranean; or a voyage across the 213,000 square miles (547,600 square kilometres) of the North Sea, from one across the three-hundredfold larger area of the Pacific. The ocean does not, like the land, wear upon its surface the evidences and effects of its size; it wraps itself in the same garment of blue waves or sullen swell wherever it appears; but the outward cloak of the land varies from zone to zone. The most significant anthropo-geographical influence of the size of the oceans, as opposed to that of the smaller seas, comes from the larger circle of lands which the former open to maritime enterprise. For primitive navigation, when the sailor crept from headland to headland and from island to island, the small enclosed basin with its close-hugging shores did indeed offer the best conditions. To-day, only the great tonnage of ocean-going vessels may reflect in some degree the vast areas they traverse between continent and continent. Coasting craft and ships designed for local traffic in enclosed seas are in general smaller, as in the Baltic, though the enormous commerce of the Great Lakes, which constitute in effect an inland sea, demands the largest vessels.

The vast size of the oceans has been the basis of their neutrality. The neutrality of the seas is a recent idea in political history. The principle arose in connection with the oceans, and from them was extended to the smaller basins, which previously tended to be regarded as private political domains. Their limited area, which

enabled them to be compassed, enabled them also to be appropriated, controlled and even policed. The Greek excluded the Phœnician from the Ægean and made it an Hellenic sea. Carthage and Tarentum tried to draw the dead line for Roman merchantmen at the Lacinian Cape, the doorway into the Ionian Sea, and thereby involved themselves in the famous Punic Wars. The whole Mediterranean became a Roman sea, the *mare nostrum*. Pompey's fleet was able to police it effectively and to exterminate the pirates in a few months, as Cicero tells us in his oration for the Manilian Law. The Venetians wished dominion over the Adriatic to be confirmed to them by the Pope. Sweden and Denmark strove for a *dominium maris Baltici*; but the Hansa Towns of northern Germany secured the maritime supremacy in the basin, kept a toll-gate at its entrance, and levied toll or excluded merchant ships at their pleasure, a right which after the fall of the Hanseatic power was assumed by Denmark and maintained till 1857. "The Narrow Seas" over which England claimed sovereignty from 1299 to 1805, and on which she exacted a salute from every foreign vessel, included the North Sea as far as Stadland Cape in Norway, the English Channel, and the Bay of Biscay down to Cape Finisterre in northern Spain.*

At the beginning of the 16th century the Indian Ocean was a Portuguese sea, and Spain was trying to monopolize the Caribbean and even the Pacific Ocean. But the immense areas of these pelagic fields of enterprise, and the rapid intrusion into them of other colonial powers soon rendered obsolete in practice the principle of the *mare clausum*, and introduced that of the *mare liberum*. The political theory of the freedom of the seas seems to have needed vigorous support even toward the end of the 17th century. At this time we find writers like Salmasius and Hugo Grotius invoking it to combat Portuguese monopoly of the Indian Ocean as a *mare clausum*. Grotius in a lengthy dissertation upholds the thesis that "*Jure gentium quibusvis ad quosvis liberam esse navigationem*," and supports it by an elaborate argument and quotations from the ancient poets, philosophers, orators and historians.† This principle was not finally acknowledged by England as applicable to the "Narrow Seas" till 1805. Now, by international agreement, political domain extends only to one marine league from shore or within cannon range. The rest of the vast water area which comprises three-fourths of the earth's surface remains the unobstructed highway of the world.

* H. J. Mackinder, *Britain and the British Seas*, p. 24, note. London, 1904.

† *Hugonis Grotii, Mare Liberum sive de jure quod Batavis competit ad indicana commercia dissertatio*, contained in his *De Jure Belli et Pacis*. *Hagae Comitiss, apud Arnoldum Leers*, 1680.

SUITABILITY OF ESKIMO METHODS OF WINTER TRAVEL IN SCIENTIFIC EXPLORATION.

BY

V. STEFANSSON.

The most recent maps of Canada show its archipelagoes stretching towards the Pole with their coast lines roughly determined and occasionally incomplete, and with their interiors blank of river, lake or mountain. Evidently, geographical needs are here still unsatisfied, while the geology, natural history and ethnology of the region have scarce had their beginnings. Had we the men and the money, a large work would be ready to our hand. The difficulties of exploring this region scientifically are not serious, and the *necessary* expense is small compared to the usual cost of Arctic work. That is, at least, the belief of the writer and the thesis of this paper.

There is a saying current throughout the north country of America—Labrador and Alaska alike: "Look out for the man with one blanket!" Being interpreted, the meaning is that if you meet a traveller with a large outfit, with many rifles for varied uses, with sleeping bags, specially designed tents and camp outfits and ingenious devices to meet the most remotely conceivable need—if you meet that sort of a traveller, you need have no fear he will go farther than you have ever succeeded in penetrating, nor fare smoothly even the short distance he goes. But when you see a man whose baggage is a rifle, fish net and blanket, you have either an experienced traveller or one wise beyond his years.

The men of the far north—Slave Lake and beyond—have reduced their methods to the perfection of simplicity. A Scotchman who was formerly a carpenter in Edmonton has been living alone for years on the north shore of Bear Lake on the product of his net and gun—and that is the musk-ox country into which our great hunters make furtive incursions with loaded sleds, and return in a few weeks with a trophy or two to write a five-hundred page account of their adventures and hardships. And these adventures are genuine and the hardships real, for an inexperienced man can suffer where one who knows how lives in comfort. The Canadian Royal North West Mounted Police each year carry mail across the mountains from Dawson to Macpherson on the Peel; the achievement is creditable enough, and we have magazine articles about it; but last year

Darrell (who accompanied Hanbury on his wonderful journey through Arctic Canada) carried that mail across, and he did it differently. Where the police had guides, he had none, though this was his first crossing of the mountains; where they had several sleds and a tent, he had one sled and no tent; and where they had dogs to pull the sleds, he pulled his own sled behind him with his mail bag and food supply. That was perhaps the most wonderful journey ever undertaken in Arctic Canada, and Darrell finished it in comfort and said nothing about it—the newspapers merely noted in a few words that mail had arrived from the imprisoned whalers in the Beaufort Sea.

The writer has no thought of saying that such undertakings are practicable or even safe for the average traveller; but among our millions there should be at least a few who, by undertaking smaller things at first and gradually mastering the technique of travel, could come to equal the best achievements of the past and even set new standards. It goes without saying that the "man with one blanket" travels faster and more cheaply than one cumbered with baggage and obsessed with the idea that this luxury and that convenience cannot be left behind.

But to come to the direct consideration of the little-known north of Canada with its outlying islands: this section of country is now, or has been, throughout the greater portion of its extent, inhabited by the people known as Eskimos. Evolution through centuries has ground these northerners into well-nigh perfect adaptation to their surroundings, so that they live in well-being and a general high degree of creature comfort in one of the least fruitful sections of the world. If they can dwell there in comfort, bringing up their children and taking care of their old and feeble, is it not reasonable to suppose that in the same country a few of our hardier young men could live for a few years under similar conditions and bring back note-books and maps of value? True, it is in many localities difficult to transport such natural history collections as are much to be desired, but in most places they could be gotten together and cached in some point accessible to ships either from the east or west (whalers, etc.).

"Do in Rome as the Romans do" is the traveller's golden rule under most circumstances, and nowhere does this hold more rigidly than for the north. For that reason it is one of the least explicable things in the history of Arctic exploration that Eskimo methods of travel were not sooner and more generally adopted. There may be considerable reason in the explanation frequently given—that the

English mind (cf. our historic General Braddock) is unwilling in general to learn from savages or the men of the frontier; a significant consideration also is that men of the Franklin and Richardson type were unfamiliar with Eskimos, but carried Indian methods of travel into the Eskimo country. True, Indian methods are not so bad as those developed by whites farther south, and many of these early overland Arctic journeys are of a high class—especially Dr. Rae's. Perhaps the most important thing in winter travel is ability to build a snow house, and it is little less than tragic that so late as the time of Kane and Hayes men came near freezing to death in the open, when an hour and a half of work would have built a snow house to shelter the entire party and keep them in warmth and comfort through a night that came near costing several lives. Americans can take some comfort in the fact, however, that it was Peary who first had the good sense to discard "approved Arctic clothing" (made in Europe) for Eskimo clothes, "especially designed sleds" for Eskimo sleds, and tents for the snow house. That he has learnt these things and others from the inhabitants of the lands he has explored is one of the cornerstones of his success, perhaps the greatest contributing factor towards his preëminence as the master of the technique of winter travel.

It is true that Commander Peary's expeditions are expensive, but that is largely in the cost of ships and the pay of men that are needed to get within striking distance of the Pole. In the Canadian Arctic, however, many a little known shore is approached yearly by whalers, both from the east and the west, and to be landed on one of them could be arranged at a slight expense. It is true that wherever one is landed, it would be safer, if one had the resources, to have a few sacks of flour or rice, or some other simple food, landed and cached as a base to retreat upon in case of misfortune in fishing or hunting, but one or two hundred dollars will buy a good deal of staple food from a whaling captain.

Whatever the purpose of the undertaking, one should at once upon landing associate himself with Eskimos for the purpose of learning their methods of securing food, of building houses, and of travel. The Eskimos, in all regions familiar by experience or hearsay to the writer, are friendly and hospitable and are easy to get along with for a man of reasonable discretion. For dealing with them, staple goods should be taken into any section where the people have been in contact with whites (tea, tobacco, flour, etc.), but needles, files, etc., to the less-known sections. On the whole, travel in the inhabited sections of the Arctic islands and the north coast

of Canada should be a good deal cheaper than the most modest European tour of the same length of time.

Scientific exploration can be carried forward by Eskimo dog sleds in winter and Eskimo skin boats in summer (though a whale boat would be preferable), wherever game or fish is sufficient. For most purposes it is best to arrange the trips to conform with Eskimo habits as to season, for those habits have their reason in the natural conditions of the country. At certain times of year the Eskimo go inland to hunt caribou or musk-ox; that should also be the explorer's season for investigating the interior of whatever section is available; in the fishing season the people are on the coast, and then boat voyages can best be undertaken. It is a good thing to have along a tent for summer or early fall use and also (on the mainland) for going into timbered sections where snow houses cannot be built. If one can have some condensed food (malted milk, pemmican, etc.) landed where one is put ashore, that would be advantageous, though not at all indispensable for winter journeys by sled—for the lightness of the load determines largely how far one can penetrate into gameless sections.

As to the comfort of a winter with the Eskimos, it seems to the writer better than argument or citations to make a personal statement for those who care to take his word as an index of the facts. The Eskimo houses he has known (between the Colville River, Alaska, and Cape Brown east of the Mackenzie) are comfortable and fairly well-ventilated; snow houses make so warm a camp in the worst weather that one can sleep comfortably in light blankets (temperature, say, $+45^{\circ}$ F.) while any clothes that have been damp from the previous day are hung up to dry against the morning. The diet during the winter 1906-7 was fish (eaten raw or cooked) and whale blubber—no salt or other food of any kind. The writer found it no less healthful than the Eskimos did, and gained in weight twenty pounds during the winter. The entire year was such as to make him not at all reluctant to return to the same country and same mode of life for another year; his conclusion from the experience of thirteen months was that there is much opportunity in the Arctic for good scientific work in new fields with less than half the discomfort and less than a tenth of the expense that are usually wasted on such undertakings. There was enough costly and worthless Norwegian fur clothing thrown away on one of the recent polar expeditions to pay the expense of a modest scientific journey to the Arctic, and the added sum paid for "specially designed" sleds too fragile for their use would bring the amount to a handsome figure.

THE NINTH INTERNATIONAL GEOGRAPHICAL CONGRESS.

I.

The Committee on Organization of the Ninth International Geographical Congress, which will meet at Geneva from July 27 to August 6 of this year, has printed in a pamphlet of 56 pp. details of the organization of the Congress, lists of the executive and honorary officials and committees, titles of papers accepted to February 15, and other information. The preparations are far advanced and the prospects are bright for a very successful meeting.

English, French, German, and Italian are the authorized languages, and papers in Latin may be submitted. The Honorary Presidents are Dr. Ernest Brenner, President of the Swiss Confederation; Dr. Henri Fazy, President of the Council of State of the Republic and the Canton of Geneva; Leopold II., King of the Belgians, and Charles I., King of Roumania.

Dr. Arthur de Claparède, President of the Geographical Society of Geneva, is the President of the Congress.

THE HONORARY VICE-PRESIDENTS are:

A. The surviving Presidents of previous Congresses:

The Duke di Sermoneta, Prince of Teano (Congress of Venice, 1881).

Dr. Albert Gobat, Councillor of State (Congress of Berne, 1891).

Sir Clements R. Markham (Congress of London, 1895).

Commander Robert E. Peary, U. S. N. (American Congress, 1904).

B. Presidents of the Geographical Societies of Amsterdam, Berlin (2 Societies), Brussels, Budapest, Cairo, Christiania, Copenhagen, Edinburgh, Lisbon, London, Madrid, Mexico, New York, Paris (2 Societies), Rome, Saint Petersburg, Stockholm, Sydney, Tokio, Vienna, and Washington.

C. Explorers and savants:

The Duke of the Abruzzi, the Prince of Monaco, Roald Amundsen, Prince Roland Bonaparte, Captain Umberto Cagni, Prof. Henri Cordier, Prof. William Morris Davis, Prof. Dr. Erich von Drygalski, Captain A. de Gerlache de Gomery,

Dr. E. T. Hamy, Sven Hedin, Sir Joseph Dalton Hooker, Dr. J. Scott Keltie, Prof. Albert de Lapparent, Prof. Dr. H. Oscar Lenz, Prof. Emile Levasseur, Sir John Murray, H. E. Fridtjof Nansen, Mrs. Zelia Nuttall, Prof. Dr. Alb. Penck, Count J. F. von Pfeil und Klein-Ellguth, General J. de Schokalsky, Prof. Dr. G. Schweinfurth, Captain Robert F. Scott, R. N., H. E. P. de Semenov, Dr. Eduard Suess, Dr. Arminius Vambery, and Dr. Hermann Wagner.

THE HONORARY COMMITTEE is constituted as follows:

A. The Presidents of the Geographical Societies of Antwerp, Buenos-Aires, Frankfurt-on-the-Main, Greifswald, Hamburg, Helsingfors, Jena, La Paz, Leipzig, Lille, Lima, Lyons, Manchester, Marseilles, Melbourne, Munich, Nancy, Philadelphia, Prague, Rio de Janeiro, and Stuttgart.

B. The following savants and explorers;

Prof. D. Anoutchine, Henryk Arctowski, Louis Gustave Binger, Prof. P. Vidal de La Blache, Dr. F. Bonola Bey, C. E. Borchgrevink, Prof. Dr. Eduard Brückner, Dr. J. Charcot, Rear-Admiral C. M. Chester, U. S. N. (retired), Prof. Dr. C. Chun, Prof. Dr. Guido Cora, Prof. Dr. G. Dalla Vedova, Dr. D. T. Day, Lieut.-Col. C. Delmé Radcliffe, Jean Du Fief, Prof. Dr. A. Engler, Dr. Béla Erödi, Prof. Ch. Flahault, Henry Gannett, Prof. Dr. G. Gerland, Major Alfred St. Hill Gibbons, George K. Gilbert, Prof. Dr. E. A. Goeldi, Count G. A. von Goetzen, Baron Hulot, Captain G. Kollm, Col. P. K. de Kozlof, Dr. G. J. Lahovary, Prof. William Libbey, H. J. Mackinder, Prof. O. Marinelli, Dr. H. R. Mill, Prof. Dr. O. Nordenskjöld, Prof. Dr. E. Oberhummer, Chev. J. de Payer, H. E. S. Pichon, Minister of Foreign Affairs (Paris), G. Potanine, Gen. Julian Suárez Inclán, Prof. Dr. A. Supan, Captain Ernest de Vasconcellos, Prof. Dr. E. Warming, Col. Sir C. M. Watson, Prof. Dr. A. Woeikof.

The papers, memoirs, and communications already listed in February number 188; 130 in French, 32 in German, 19 in English, 7 in Italian.

The subjects to be brought before the Congress are classed in fourteen Sections, as follows:

SECTION I.—MATHEMATICAL GEOGRAPHY AND CARTOGRAPHY. President, Lieut.-Col. L. Held, Berne. Twenty-four reports and papers, including a report by Prof. Penck on the progress of the map of the earth, on the scale, 1:11,000,000; a paper by Gen. J. de Schokalsky of St. Petersburg, on the

necessity for organizing an international cartographic association, and a paper by Charles Lallemand, director of the levelling work in France, on the progress of these observations.

SECTION II.—PHYSICAL GEOGRAPHY IN GENERAL. President, Prof. A. Penck of Berlin. Fourteen papers, including one by Prof. Davis, on "Practical Exercises in Physical Geography."

SECTION III.—VULCANOLOGY AND SEISMOLOGY. President, not named. Eleven papers. Prof. Forel will discuss the organization of the work of the International Seismological Association, and Dr. Karl Sapper, the geographical importance of volcanoes.

SECTION IV.—GLACIERS. President, not named. Nine papers, one by Prof. Penck, on the climate of the Alps in the glacial periods, and one by Mr. Joseph Vallot, Director of the Meteorological Observatory of Mont Blanc, on variations in the Mer de Glace, near Chamonix, during 100 years.

SECTION V.—HYDROGRAPHY (POTAMOGRAPHY AND LIMNOLOGY). Prof. Forel, President. Thirteen papers.

SECTION VI.—OCEANOGRAPHY. President, Sir John Murray. Thirteen papers, including those by Dr. William S. Bruce on the Oceanographical Results of the Scottish National Antarctic Expedition, and by Prof. J. Thoulet on the Bathymetrical Map of the Oceans.

SECTION VII.—METEOROLOGY AND CLIMATOLOGY—TERRESTRIAL MAGNETISM. President, not named. Fifteen papers.

SECTION VIII.—BIOLOGICAL GEOGRAPHY (BOTANICAL GEOGRAPHY AND ZOÖGEOGRAPHY). President, Dr. Casimir de Candolle. Seven papers.

SECTION IX.—ANTHROPOLOGY AND ETHNOGRAPHY. President, Dr. E. T. Hamy. Thirteen papers.

SECTION X.—ECONOMICAL AND SOCIAL GEOGRAPHY. President, not named. Twenty-four papers, including those of Professor Paul Vidal de la Blache on the Geographical Interpretation of Scenery; Prof. Albert Perry Brigham on The Distribution of Population in the United States, and of Alfred Bertrand of Geneva, in which he illustrates the opening of Central Africa by comparing the country of the Barotse (upper Zambezi) as it is to-day with its condition twelve years ago.

SECTION XI.—EXPLORATION. President, not named. Thirteen papers. Most of the papers will relate to polar exploration. Among those who will participate are Amundsen, Arctowski, Bridgman, Charcot, Drygalski, Nordenskiöld, and Scott.

SECTION XII.—GEOGRAPHICAL INSTRUCTION. President, Prof. W. M. Davis. Thirteen papers. Among the speakers will be Miss Zonia Baber, Profs. A. J. Herbertson, Dalla Vedova, Marcuse, and E. de Martonne.

SECTION XIII.—HISTORICAL GEOGRAPHY. President, Prof. Henri Cordier. Eleven papers.

SECTION XIV.—RULES AND NOMENCLATURE. President, not named. Seven papers.

The Congress will be preceded and followed by scientific excursions for the study of geographical phenomena in the most characteristic parts of Switzerland and the French Departments of Ain, Haute-Savoie and Savoie. The programme of these excursions, entitled "Livret des Excursions scientifiques," may be obtained for 1.50 fr., by addressing Prof. Émile Chaix, 23 Avenue du Mail, Geneva.

Care must be taken, in applying for an excursion, to give the number of the applicant's card as a Member of the Congress; none but members being expected to take part in the excursions.

FÊTES AND RECEPTIONS.—A special programme will be issued at the opening of the Congress, to complete the following arrangements:

An informal reunion will be held on the 26th of July, at 9 o'clock P. M., in the rooms and gardens of the Palais Eynard—a welcome in the name of the Municipality of Geneva;

The Government of the Republic and Canton of Geneva, together with the Municipality, will offer a reception to the Congress

at the Ariana in the park Revilliod, and the grand hall of the Museum;

The Business Association of Geneva will offer a night festival to the Congress, with Venetian illumination and a blaze of fire on the water front;

The Committee on Organization has provided a day's excursion for a complete tour of the Lake of Geneva;

The Government and the Municipality of Geneva will give an official dinner to the Delegates and their families. Other receptions are proposed, to the Delegates, to the Congress, and to individual Sections, by the President of the Congress and Mme. Arthur de Claparède, by M. Alfred Bertrand, Vice-President, and Mme. Bertrand; by M. Lucien Gautier, former President of the Geneva Geographical Society of Geneva, and Mme. Gautier; and by others.

A banquet will be given by the Geographical Society to celebrate its Fiftieth Anniversary, and

A Special Committee will organize a gala representation in the open air, in honour of the Congress.

Eleven Governments, twelve universities and institutions, and sixty-nine societies will be represented, and the number of delegates enrolled on the 15th of February was 203.

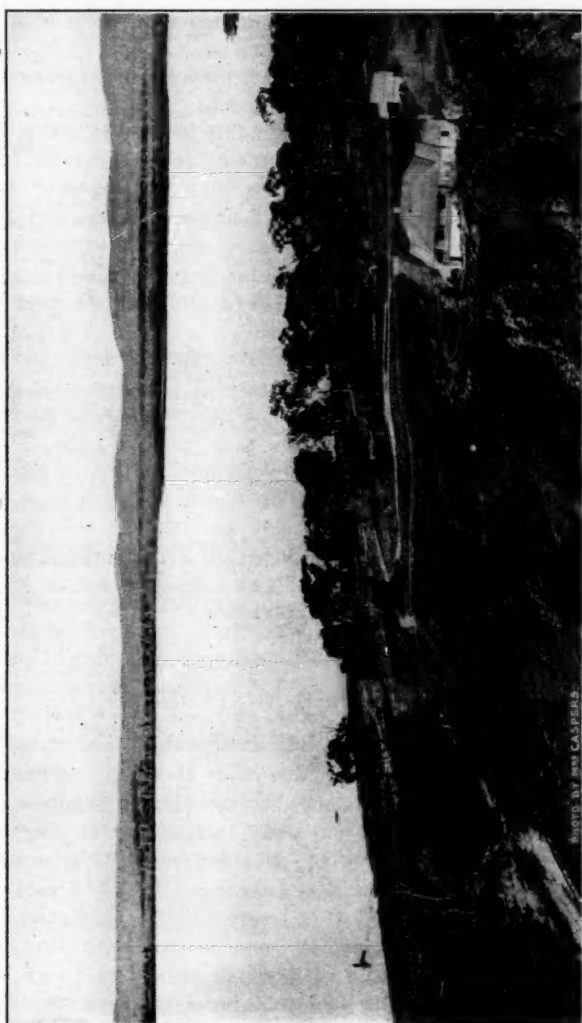
The American Geographical Society will be represented by Messrs. Archer M. Huntington, William Libbey, Fordham Morris, Albert Perry Brigham and E. L. Stevenson.

LAKE GEORGE, AUSTRALIA.

Lake George, the largest lake in New South Wales, occupies an area of subsidence in the Blue Mountains about 135 miles to the southwest of Sydney. It is bounded on the west by a fault plane of about 400 feet drop. It is not always a lake, for at intervals it shrinks for years and finally becomes entirely dry. One of the accompanying pictures shows Lake George nearly full of water; the other shows a part of its bed when completely dry, as at the present time. Lake George was a lake in the years 1816-1830, 1852, 1864, and 1874-1900. Since 1900 it has been shrinking, and it was practically dry in 1905. The second picture shows sheep scattered over the lake floor, feeding on the grasses and the salt bush which flourish there and are much relished by these animals.

At the present time, the lake is portioned into grazing leases, and

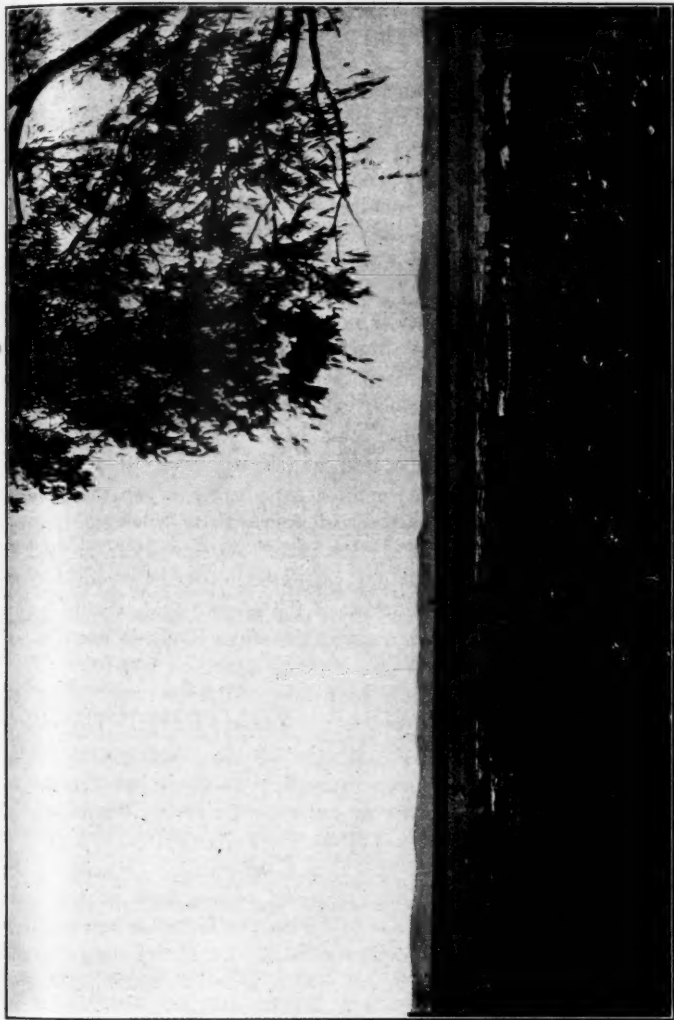
fences run nearly across the bed. The local sheep-breeders prefer the lake dry, since many extra sheep can be carried on their runs.



VIEW OF LAKE GEORGE IN 1884 WHEN NEARLY FULL OF WATER.

At the same time the neglected boat houses, jetties, and the decaying boats and launches along the shore recall the old days when the lake

teemed with Murray cod or carp, and when black ducks and other birds were in the habit of frequenting the huge sheet of water.



VIEW OF THE DRY BED OF LAKE GEORGE IN FEBRUARY, 1907.

These pictures are taken from the *Proceedings* of the Linnean Society of New South Wales for 1907 and illustrate a paper by Mr.

T. Griffith Taylor, lecturer in the University of Sydney, on the area of subsidence occupied by Lake George and the evolution of the lake.

It was described by the late Mr. H. C. Russell, as occupying the southern portion of a depression in the Cullarin Range called the Lake George Basin, 490 square miles in extent, and the only example in New South Wales of a purely inland drainage area. It is watered by several small streams, but has no visible outlet.

Mr. Taylor's studies of the physiography of this region seem to corroborate the theory that Lake George never had an outlet. No evidence of any flood more than thirty feet deep can be traced as having occurred for many hundreds of years, while nearly 200 feet are necessary to provide an outlet north, west or south. Probably since its inception the lake has been receiving silt which has gradually filled its bed.

A local flood has practically no effect on the lake. The dry silt acts as a huge sponge and absorbs a covering of several inches of water brought down by a deep creek or some other feeder in the course of a night. The conditions are extremely favourable for great evaporation. The wind may drive a layer of water several miles from the actual lowest spot, and before it can flow back the sun's heat has reclaimed it for the atmosphere. When the prevailing conditions are arid, the lake dries up. From 1828 to 1864 the lake was over 10 feet deep only in 1852. As far as can be judged from meteorological records not yet extending over a century, the indications point to a continuation of the present arid conditions for some time. The sheep herders are, therefore, likely to use the bed of the lake as grazing ground for years to come.

The great fault which hems in the lake on the west runs north and south for 30 miles and constitutes the Cullarin Range. The violent tectonic changes have entirely altered the drainage system of the district. The Molonglo flows through a gorge it has cut in the Cullarin Range, and is clearly an antecedent river. The feeders of Lake George once formed part of the Yass river system.

From a comparison with the known silt-forming capacity of the basin of the river Po, in Italy, a period of less than 20,000 years appears to have been sufficient to fill up the Lake George basin to its present silt level under modern conditions. Hence the fault and the area of subsidence may be referred to a period contemporaneous with the close of the Great Ice Age in North America.

GEOGRAPHICAL RECORD.

AFRICA.

POSTAL SERVICE IN THE SAHARA.—Since January 1, 1908, In-Salah, the capital of the French Territory of the Oasis, has been connected with the north of Algeria by two postal lines, one extending through Biskra, Tuggurt, and Wargla, and the other through Laghuat, Ghardaïa and El Golea. A fast camel service is now being established to carry the mail monthly from In-Salah to Timiaouine and Gao on the Niger. The service, which is being developed by the Government, will be extended from Gao up the Niger to Timbuktu, down the river to Niamey and across the southern part of the desert to Agadès, thence south to Zinder in the neighbourhood of the Sudan, northwest of Lake Chad. The new trans-Saharan postal service will be in full operation this spring. It is expected that the extension of the telegraph service across the desert will not long be delayed. (*Revue Française*, March, 1908.)

SURVEYS IN THE SAHARA.—This sketch map of the route of the Arnaud-Cortier Mission across the Sahara is reproduced from the *Revue Française* (Feb., 1908). Leaving Algiers by train, the party reached the rail head at Colomb-Béchar. With a small caravan they then proceeded in a southeasterly direction to In Salah. The larger stretch of desert was still before them, and they struck out across the former forbidden land of the mountainous Hoggar, the stronghold of the once formidable Tuaregs, and then turned southwest to the Sudan. Leaving In Salah on March 18, 1907, they arrived at Gao on the Niger on May 22. That is to say, in less than two and a half months they crossed the greater part of the Sahara without firing a hostile shot or meeting with any opposition from the natives. They were well received by the desert tribes and their chiefs.

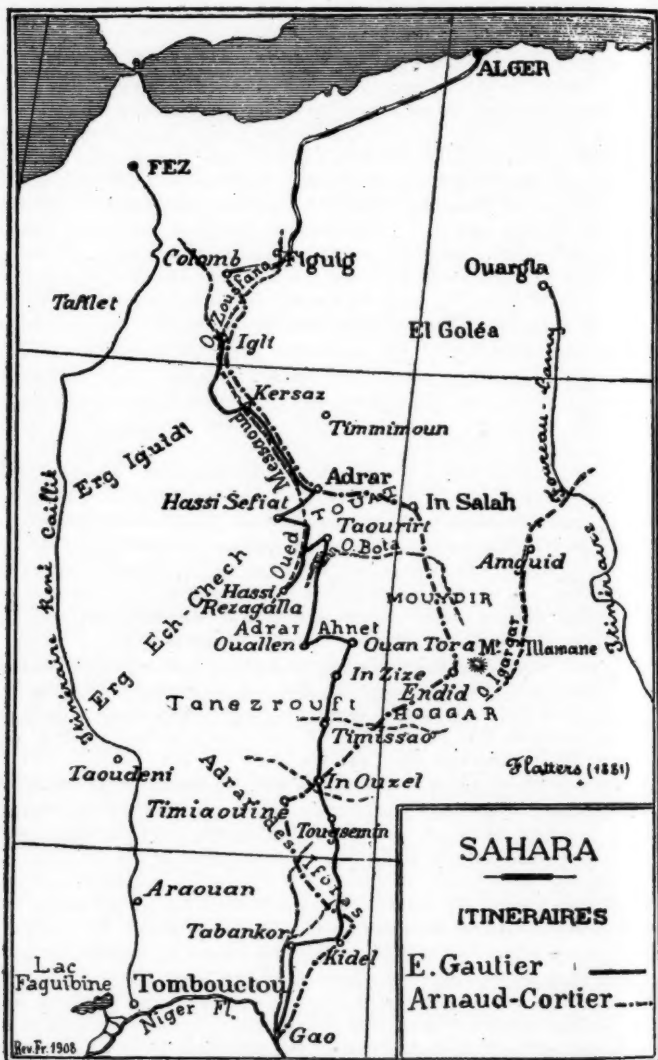
The largest geographical significance of this notable journey is that the Arnaud-Cortier Mission was able to complete the first line of triangulation across the desert. The line had been carried forward by Mr. Villatte from Algeria to Timiaouine and from that point the Mission continued it to Gao, where it was joined to the line between Gao and Timbuktu.

Algiers is thus joined with Timbuktu by a line of precise surveys, determined with instruments and observations of a high degree of accuracy. This triangulation net will form the base for the survey of other itineraries and will greatly facilitate the accurate mapping of a wide area on both sides of it.

The *Bulletin* of the Comité de l'Afrique Française (No. 12, 1907) mentions the fact that the triangulation established in the Algerian Sahara in 1904 by Mr. Villatte's survey party made it possible for Lieut. Nieger to produce the admirable map of the north Sahara on a scale of 1:1,000,000. Though the French have made many journeys in the more southern regions of the desert since they organized the fast camel service, they have travelled too rapidly to make good maps. It will now be possible, however, to give large cartographic value to future journeys by basing surveys on the triangulation accomplished last year.

Lieutenants Vallier and Langlumé and Capt. Pasquier of the Mission were able to make a nearly complete survey of the region of Adrar des Iforas based upon the astronomical points fixed on the main itinerary; also to study this region

in considerable detail in its geology and commerce, and much was learned of the ways of life of the Tuareg Iforas.



Later in the year Félix Dubois crossed the Sahara in four months from In Salah to the Niger, travelling with a native guide, but without escort. Such journeys

as these have been rendered possible by the French organization, within the past six years, of fast camel service. Previous to this innovation, the French were unable to overtake the predatory and hostile bands of nomads, punish them for the outrages they committed, and reduce them to order. The subjugation of these desert tribes is now practically complete, the crossing of the Sahara is comparatively easy, and the desert is no longer the terror of travellers. The heroic period of Saharan exploration has been definitely closed.

CONDITION OF THE UPPER NILE.—Sir William Garstin, who has returned to Cairo from the Upper Nile, reports that the water level in the Bahr-el-Seraf and the Bahr-el-Jebel and in the great swamp through which they pass is exceptionally low at present and everything seems to point to a very scanty summer supply in Egypt this year. If it were not for the Assuan dam, the cotton crop would be in danger, but the reservoir removes all cause for alarm. The *sudd* in the Bahr-el-Ghazal has recently been giving trouble. After remaining open for years, this river has been rather badly blocked for the past two seasons and, at present, it is closed for about fifteen miles above its outlet at Lake No. When the Sudan steamers were transporting supplies to the equatorial province early last winter they narrowly escaped imprisonment and extricated themselves with much difficulty. (London *Times*, weekly edition, Feb. 28, 1908.)

THE NIAM NIAM.—Messrs. E. Giard and V. Brière have sent to the Society from Paris a separate of 32 pp., from the *Revue Internationale de Sociologie*, entitled "Les Niam Niam." The monograph is a French translation from the original Italian written by Enrico Craffen and Dr. Edoardo Colombo. It is a study of the Niam Niam (great meat-eaters) inhabiting the northeastern part of the Congo Free State and first described by Schweinfurth. It is a desirable contribution to our scanty literature on the Niam Niam.

AMERICA.

ALASKA SURVEYS IN 1908.—Thirteen U. S. Geological Survey parties will continue the surveys and investigations in Alaska during 1908. Six parties will study the geology and mineral resources in certain districts, two will combine this class of work with topographic surveys, three will be engaged in topographic mapping, and two in the study of the water resources in some of the important mining districts. Here is a brief outline of the various features of the work:

Southeastern Alaska: Detailed study by C. W. Wright of the mining districts of Prince of Wales Island, including the Kasaan Peninsula and Copper Mountain regions; detailed topographic mapping of Kasaan Peninsula and mapping of the Copper Mountain mining district, on Prince of Wales Island, by R. H. Sargent;

Copper River Region: As capital is being invested in railroad construction and mining in this region, the surveys will be pushed this season. The northern copper belt along the inland face of the Wrangell Mountains from White River to the Nabesna will be studied in detail by F. H. Moffit, Adolph Knopf, and S. R. Capps, and topographic surveys will be made in the upper White River region. D. C. Witherspoon and R. M. La Follet will also work in this region and it is expected that the distribution of copper ores will be outlined through the entire belt;

Prince William Sound: The geological investigations made three years ago will be supplemented by the work of U. S. Grant, who will visit all the more important prospects;

Southwestern Alaska: W. W. Atwood will study the coal of Herendeen Bay and Unga Island and also the Matanuska coal field. He will be assisted by H. M. Eakin, and it is hoped that the surveys will enable him to make a fairly definite statement concerning the coal resources of southwestern Alaska;

Yukon Basin: J. W. Bagley will survey an area along the Tanana above Fairbanks and extend reconnaissance surveys south of the Tanana and west of the Delta River; L. M. Prindle and F. J. Katz will complete the geological survey of the Fairbanks district, studying the placer deposits and associated bed rock and the genesis and distribution of the gold; C. C. Covert and C. E. Ellsworth will continue the study of water resources of the placer districts in the Yukon-Tanana belt; Mr. A. C. Maddren will go to the Innoko River, a tributary of the lower Yukon, to obtain more definite information of this district where discoveries of placer gold were reported last year;

Seward Peninsula: The geological structure of this region is very complex and some time must elapse before a final statement can be made regarding the occurrence of the gold in bed rock. P. S. Smith and E. M. Kindle will head parties which will continue investigations here. The study of the water resources of the peninsula will be continued by F. F. Henshaw;

Alfred H. Brooks will continue the supervision of the Alaska work. He will be engaged in Washington until about July 1 and will then visit some of the survey parties in Southeastern Alaska, the Fairbanks district and the Seward Peninsula.—(*Press Bulletin* of the U. S. Geological Survey, No. 322.)

THE WINDS OF THE LAKE REGION.—The general climatic effects of the Great Lakes have yet to receive the attention which this subject merits, but from time to time studies of some special feature of the Lakes' influence on climate appear, and thus more and more information is gradually accumulating. In the *Monthly Weather Review* for November, 1907, Professor A. J. Henry, of the United States Weather Bureau, discusses "The Winds of the Lake Region" in a contribution to American climatology, which, though short, is of considerable interest. For the purposes of this study both the regular station records of the Weather Bureau and the records of co-operative observers have been used. It appears that in the cold season (November-March) the winds of the Great Lakes are controlled chiefly by the meteorological conditions which prevail in the continental interior, the prevailing direction being northwest. In spring and early summer the winds come alternately under the influence of the steep temperature and pressure gradients of the lingering winter cold, and the increasing temperature of the advancing season. Hence, the spring winds are more variable than those of winter, showing little definite system. There appears to be a slight monsoon influence on Lake Michigan, shown in onshore winds from April to September. In summer, the winds of the Lake region are generally onshore, forming about 20% of the total winds observed, but these prevail only when pressure gradients are weak. Professor H. A. Hazen, some years ago, called attention to the lake breezes which had been noted at Chicago, and now Professor Henry notes the occurrence of such lake winds, mostly in the forenoon hours of quiet summer days, and confined mostly to the west shore of Lake Michigan.

The prevailing winds of summer are southwest to south, except on Lake Superior, where local causes seem to be at work. The southerly winds of the lower Mississippi Valley seem to divide, in late spring, into two branches, one forming the summer southeast winds of the Missouri Valley and Plains, and the other, the southwest winds of the Ohio Valley and lower Lakes. In autumn, the Lakes have their minimum effect on wind direction. The general direction is southwest over the lower Lakes and northwest and west over Lake Superior.

The lower Lakes provide an easy path for the winds, forming, as they do, a great shallow depression. It seems probable that all winds between west and north follow this depression unless strong pressure and temperature gradients oblige them to cross the Lakes obliquely. Ten miles is the average hourly velocity of the wind in the Lake Region for the mean of the year. The winter winds are steadier, *i. e.*, blow with a more uniform velocity day and night, than the winds of spring and summer, but the recorded wind velocities vary a good deal because of the varying altitudes of the anemometers above the ground. The storms which produce high winds in the Lake region belong to three groups, viz., (1) storms moving to the eastward north of Lake Superior; (2) storms approaching the Lake region from south or southwest, or whose centres approach from the west, but south of Lake Superior; (3) storms occasionally moving northward along the Atlantic Coast; becoming better developed as they reach higher latitudes and often curving inland over the Eastern Middle Atlantic States. Storms of the first group are most numerous, by far, and least dangerous. Storms of the second group are generally attended by dangerous winds over some part of the Lake Region. Storms of the third group rarely affect the upper Lakes, but do cause dangerous gales over Lakes Erie and Ontario.

R. DE C. W.

PRECIPITATION IN THE LAKE REGION.—The *Meteorological Chart of the Great Lakes*, No. 1, 1907, by Alfred J. Henry and Norman B. Conger, contains a chart showing the average annual precipitation in the Lake region for the period 1871-1906. This chart is based on rainfall measurements at 21 stations with records covering the whole period, but in all 107 stations were used, all but 7 of which had more than ten years of observations. The records of ten years and over were "generally reduced" to the fundamental period. The total amount of rain and melted snow is about 31 inches. The increase in precipitation due to the presence of the Lakes is believed to be not more than two or three inches annually. At a single station in the Lake region the difference between the year of greatest rainfall and the year of least rainfall may be as much as 30 inches. R. DE C. W.

BIBLIOGRAPHY OF AMERICAN HISTORICAL SOCIETIES.—Vol. 2, of the annual *Report* for 1905, of the American Historical Association, just issued from the Government Printing Office, is the second edition of the Bibliography. It contains 1,374 pp., devoted to the literary output of American historical societies, including some of the geographical societies. The principal contents of each volume are noted by title, and a subject and author index makes it easy to find each reference. A full biographical index is also included. The list of articles appearing in the publications of the American Geographical Society (1852-1892; some volumes are omitted) appears on pp. 74-87. The usefulness of the work can hardly fail to be commensurate with the great labour bestowed upon it.

SIXTH REPORT OF THE MARYLAND GEOLOGICAL SURVEY.—An elaborate report on the physical features of Maryland fills 251 pp., or nearly one half of the volume. It was written by Prof. Wm. Bullock Clark, State Geologist, and Edward B. Mathews, with the collaboration of others, and is a careful summary of the physiography, geology, mineral resources, soils, climate, hydrography, terrestrial magnetism, and forestry of the State. It should prove of great interest and value to the citizens of Maryland. In describing the three regions into which the State is divided (the Coastal Plain, the Piedmont Plateau, and the Appalachian Regions) large attention is given to the influence of topography upon the inhabitants and to phases of economic physiography in each division. The need has long been felt of such a comprehensive and reliable treatment as this of the various States of the Union, and Maryland is to be congratulated that it is one of the first to meet the demand for authoritative information. A new geological and agricultural soil map of the State accompanies the volume.

SUMMER MEETING OF THE AMERICAN ASSOCIATION.—The American Association for the Advancement of Science will hold a summer meeting at Dartmouth College, Hanover, N. H., during the week beginning June 29. Prof. C. H. Hitchcock, a member of the Committee of Arrangements, will act in the interest of Section E, Geology and Geography.

SOCIÉTÉ DE GÉOGRAPHIE DE QUÉBEC.—This Society, having been reorganised, has resumed the publication of its *Bulletin*, necessarily suspended about ten years ago. It will be published quarterly, and the January number makes a very favourable impression. The contents include a paper on the explorations, geography, and resources of the Abitibi and Chibougamo regions; another, on the sovereign rights claimed by Canada over Hudson Bay, a description of the little-known region in northern Quebec to be opened by the construction of the new trans-continental railroad; a short account of the Nascapi Indians of Labrador, and four pages of geographical notes and news, all relating to Canada. It is gratifying to note the Society's renewed activity.

CLIMATE OF THE ISTHMUS OF PANAMA.—Few, if any, writers on Panama have made so thorough a study of the climatology of the Isthmus as Brig.-Gen. Henry L. Abbot, U. S. A. (retired), who, as a member of several engineering boards, has been actively connected with the canal surveys at various times for years past. In a discussion of the *Present Status of the Panama Project* (*Ann. Amer. Acad. Pol. and Soc. Sci.*, Jan., 1908), Gen. Abbot summarizes the conditions of climate and health briefly and clearly. The temperature varies very little from month to month throughout the year, the mean annual being about 80°. In the dry months the daily range averages from 73° at 6 A. M. to 89° at 1 P. M. In the rainy season the means are 75° and 86° at the corresponding hours. On the Pacific Coast the extremes come a little later and the range is some 3° less. Relative humidity varies from 80% in the dry to 87% in the rainy months. The uniformly high temperature and excessive relative humidity produce lassitude in persons of northern birth, and an occasional change of climate is necessary. On the other hand, however, Gen. Abbot points out that the absence of frost will greatly assist the making of concrete for the canal, and the practical operation of the locks during the passage of vessels.

The winds average from 5 to 8 miles an hour. "Northers" at Colon occur at rare intervals, but are dangerous to shipping at the piers. Vessels passing through the canal will have little difficulty with the winds.

The dry season extends from the middle of January to the middle of April, when the equatorial rainy belt is south. For the rest of the year the rainy season prevails. Near the Atlantic Coast the mean annual rainfall is about 140 inches, while near the Pacific it is about 60 inches. The heavy rains of the rainy season reduce excavation output not far from 25%, chiefly because of the difficulty of shifting tracks and transporting material to the dumps.

The remarkable work of Col. Gorgas has brought it about that "residence in the Zone is now hardly more dangerous than in many localities in the United States." In September, 1907, the death rate for Panama and Colon showed an average of 32.93 per 1000. "The dreaded tropical diseases of the Isthmus," Gen. Abbot says, "have lost their terror."

R. DEC. W.

INDIAN TYPES IN THE AMAZON BASIN.—Dr. Theodor Koch-Grünberg's publisher, Herr Ernst Wasmuth of Berlin, has sent to the Society Lieferung 2 of this ethnologist's "Indianertypen aus dem Amazonasgebiet." The notice of Lieferung 1 in the BULLETIN (1907, p. 296) indicates the characteristics of these beautiful photographic reproductions. Part 2 includes 22 folio plates on which are shown 28 individual pictures and one group of the Tuyuka tribe and 11 individual pictures of the Bara tribe. The individuals, men and women, are shown in full face and in profile, and the plates depict their physical characteristics, attire, ornaments, and tattooing, as far as they indulge in this vanity. These are contributions to our knowledge of hitherto unknown tribes of the headwaters of the Rio Negro, first visited by Dr. Koch-Grünberg. The two instalments of the ethnologist's photographs thus far published illustrate four of the nine tribes which he studied. The accompanying letterpress describes the physical characteristics of each type and its geographical environment.

PERUVIAN METEOROLOGY.—Meteorological observations from Peru are still so few in number, and so very limited as to the period of time which they cover, that the appearance of the third volume on *Peruvian Meteorology*, in the *Annals of the Astronomical Observatory of Harvard College* (Vol. XLIX, Pt. I, 1907), is an important event. This volume contains the results of meteorological observations made at the Arequipa station of the Harvard Observatory during the years 1892 to 1895, and was prepared for publication by Professor Solon I. Bailey, who established most of the Peruvian meteorological stations, and under whose direction most of the observations were made. The tables, which are published in full, include the usual data, and also a number of special observations, as *e. g.*, the hourly amount of cloud; evaporation; the movement of the atmosphere at different levels, etc. The diurnal and annual variations of the most important elements are shown graphically.

R. DEC. W.

CLIMATIC CONTROL OF THE DISTRIBUTION OF POPULATION IN SOUTH AMERICA.—To the *Bulletin of the Geographical Society of Philadelphia* for July, 1907, Professor Mark S. W. Jefferson, of Michigan State Normal College, contributed a valuable paper on *The Distribution of People in South America*. The control of the larger geographic features is considered, and the importance of the climatic

factor stands out very clearly. The hot and moist Amazonian *hinterland* is naturally left to the aborigines, except for the few trading-posts. Caracas, Bogotá, Quito, Cuzco, Arequipa, Puno, La Paz, Sucre—all lie well above sea-level, in climates which have been praised by writer after writer as being characterized by a "perpetual spring." In the tropical Andes, although the lowlands are favourable for the cultivation of many valuable crops, man prefers the lower temperatures of the higher altitudes. In extra-tropical latitudes, the higher valleys are too cold; population is therefore most dense on the lowlands. The northern Chilean desert has a few large towns on the coast, owing to the presence of the nitrate. Southern Chile is too rainy. In the central portion of the republic is the densest population. These facts, and many others, are clearly set forth in this paper, which contains several maps.

R. DEC. W.

ASIA.

WILHELM FILCHNER'S EXPLORATIONS.—This explorer in the present year will publish the results of his last two years' journey in northeastern Tibet and the neighbouring regions of China. Some of his map work, presented at the last meeting of the German Geographical Congress, was specially distinguished by the official commendation of that body of geographical workers. His maps are to be published in eight parts, and it is said that they will give some entirely new impressions of the physiography of the regions where Filchner laboured and which were in large part unknown.

His report on the lakes of northeastern Tibet and the Matshu River was read before the Berlin Geographical Society in December, and is published in the January number of the *Zeitschrift* with fine photographs of some of the lakes and their surroundings and of the Matshu valley. The explorer made a careful determination of the area of each of the twenty-one lakes in this part of the Tibetan plateau, and he presents a diagram showing their comparative size. Kuku Nor (5,500 square kilometers) is much larger than all the other lakes together.

EUROPE.

GEOGRAPHY IN GREAT BRITAIN.—*The Geographical Journal* (March, 1908) says that public men of Leeds are organizing "The Leeds and Yorkshire Geographical Society." A committee has under consideration the objects and constitution of the new body, which will include in its activities the arrangement of lectures, excursions and exhibitions, the publication of a journal, and the formation of a library. Lord Faber will probably be the first President.

MR. EDGAR ALLAN of Sheffield has founded a Lectureship in geography at the University in that city. The salary of the lecturer will be £300 a year.

AN ANNUAL GRANT of £200 towards the work of the Royal Scottish Geographical Society was sanctioned by the British Treasury in February.

GEOGRAPHY now forms a regular part of the curriculum in the universities of Oxford, Cambridge, London, Manchester, Liverpool, Birmingham, Sheffield, Aberystwith and Edinburgh, and there is reason to believe that other universities

will soon follow suit. There is thus considerable encouragement for really competent men to devote themselves to geography as a profession.

THE WINCHESTER NATIONAL PAGEANT, depicting scenes illustrating the making of England, will be held in the Historic Grounds of Wolvesey Castle, Winchester, June 25, 26, 27, 29, 30, July 1, from 3 to 6 P. M.

For information apply to The Secretary, Pageant Office, Winchester.

TIDES BETWEEN THE NORTH AND BALTIC SEAS.—The steamers engaged in the International Ocean Researches for Germany, Sweden, Denmark, and Finland, while studying the currents between the North and Baltic seas last year, arrived at some surprising conclusions. They found that the flood tide from the North Sea and the Atlantic enters and passes through the Kattegat to the Great Belt, as a wave, at least 20 meters beneath the surface and moving at the rate of 60 centimeters a second. The tidal movement is twelve hours in passing through the Kattegat to the Great Belt. When it enters the mouth of this sound it prevents the passage of water from the Baltic westward through this channel, till the ebb flow comes, when the pent-up waters of the Baltic rush westward at a speed of 30 to 90 centimeters a second until the next flood wave in the depth rolls in.

In some European rivers, as the Seine and Severn, the flood tide rushes up stream from the sea as a great wave (Bore). This flood tide beneath the surface in the Kattegat and the Great Belt is shown by the recent investigations to be a similar phenomenon, with this difference, that the tidal wave passes through the lower water strata and shows little effect at the surface. If it were not for the upper stratum of water in this region various ports, as Göteborg, would show the same results of the ebb and flow of the tide that are observed at Hamburg.

THE GENEVA GEOGRAPHICAL SOCIETY held a Special Meeting on the 27th of March to commemorate the Fiftieth Anniversary of its foundation.

POLAR.

MR. ARCTOWSKI NOT GOING TO THE ANTARCTIC.—Friends of Mr. H. Arctowski will regret to hear that he is unable at present to complete the organization of the second Belgian South Polar Expedition. The Belgian Government decided that it could not give the enterprise the financial backing which was expected, and the funds raised by private subscription were not sufficient to meet the cost. The programme of scientific work which Dr. Arctowski had prepared was widely approved.

VARIOUS.

PROFESSOR DAVIS GOING TO BERLIN.—Prof. William M. Davis, who since 1898 has held the Sturgis-Hooper Professorship of Geology at Harvard, has been selected by the German Government as the visiting professor from Harvard to the University of Berlin in 1908-09. His lectures at Berlin will probably be upon the geography of the United States. Professor Davis will spend the coming summer abroad, but will return to Harvard in October for the first half of the academic year before going to Berlin in March, 1909.

GEOGRAPHISCHES JAHRBUCH FOR 1907.—The volume (30) contains a systematic index to the contents of the annual for the last ten years (Vols. 21-30). This index and those published in Vols. 10 and 20 form a complete guide to these invaluable notices and summaries of geographical work, classified in the various departments of geography. Nearly half of the volume, 180 pp., is given to Prof. E. Rudolph's eighth report on "Die Fortschritte der Geophysik" (1899-1902). Although this report covers a period of only four years, the topic calls for the mention of 1,753 books, papers, etc. Dr. W. Gerbing presents a report of 40 pp. on "Die Fortschritte der Gewässerkunde des Festlandes" (subterranean, standing, and flowing waters) now presented in this annual for the first time. Dr. R. Langenbeck reports in 32 pp. on "Die Fortschritte in der Physik und Mechanik des Erdkörpers." The literature and maps of Africa (1904-6), with critical remarks by Prof. Dr. F. Hahn, of Australia and Polynesia (1904-6), also by Dr. Hahn, and of Latin America (1904-6) by Prof. Dr. W. Sievers are the sections devoted to regional geography. "Die Literatur zur Geschichte der Erdkunde vom Mittelalter an (1903-07)," is reported upon in 52 pp. by Dr. Walther Ruge. It is expected that other reports, intended for this volume, but delayed, will be published during the coming summer.

THE DEVELOPMENT OF THE EARTH AND ITS INHABITANTS.—The publishing house of K. G. Lutz, Stuttgart, has sent to the Society two of the seven fine lithographic sheets, each 42½ by 32 inches, on which Prof. Dr. E. Fraas endeavours to give a graphic representation of the geological development of the earth and of some of the characteristic forms of life in each of the geological eras, as revealed by the rock formations. In "Aeltere paläozoische Formation" (sheet 1), for example, we see at the top, in brilliant colours, an ideal palæozoic land- and water-scapes. On land, in the sea, and on the sea floor are many types of the vegetable and animal life reproduced, perhaps as well as can be done, from the more or less clear indications which fossils reveal. These forms of life are numbered to correspond with numerals on the left margin where their scientific and German names are given; and also enlarged representations of some of the leading fossils.

More than half of the sheet is devoted to a diagrammatic representation in colours of the Cambrian, Silurian, and Devonian sediments of this era, rising from a base of plutonic rocks.

Of course, no attempt to make a landscape reproduction of a geological era can be very satisfactory, for much of it must be filled in by the imagination of the artist. At the same time, these pleasing pictures are already regarded in Germany, according to the reviews that have come to hand, as very carefully done and as helpful in the middle schools for which they are intended. Their study, in connection with the clearly written explanatory text which accompanies the sheets, is calculated to give some fundamental notions of geology and to stimulate interest in this science. The titles of the seven sheets are: (1) Aeltere paläozoische Formation; (2) Jüngere paläozoische Formation; (3) Trias Formation; (4) Jura Formation; (5) Kreide Formation; (6) Tertiär Formation; (7) Diluvial Formation.

LOWER PRICES FOR GERMAN MAPS.—Baron von Richthofen wrote, not long before his death, that he never travelled in his native land without taking with him Carl Vogel's map of Germany. This is the most notable work of one of the

greatest German cartographers, a map in twenty-seven atlas sheets, reduced from the detailed topographic sheets of the Government. The work is a standard map of Germany, but its price, 50 marks or about \$12, restricted its usefulness. The old price was high because the map was copper engraved, hand-coloured, and hand-printed. Several years ago, some of the leading atlas makers introduced processes by which they dispensed with copper engraving. Their completed map sheets, printed on fast presses, are as effective, as scientific, and more legible and pleasing to the eye than the old maps. By these means the price of the leading German atlases has been greatly reduced.

The same processes have now been applied to the Vogel map. The fact is worth mentioning, because first-rate maps are the most convenient and accurate repositories of geographical information, and anything that reduces their cost without impairing their value is a boon to the public.

HONOURS OF THE ROYAL GEOGRAPHICAL SOCIETY.—The two Royal Medals this year have been given to the Prince of Monaco and to Lieutenant Boyd Alexander, the Murchison Bequest to Colonel Delmé-Radcliffe, the Gill Memorial to Dr. T. G. Longstaff, and the Cuthbert Peek Fund to Rai Sahib Singh, a native Indian surveyor.

MOUNTAIN SICKNESS.—In a recent address before the Royal Scottish Geographical Society in Edinburgh, Mrs. Fanny Bullock Workman discussed the experiences of herself and of her party during *Exploration and Climbing in the Nun Kun Himalaya* (Scot. Geogr. Mag., Jan., 1908). Above 20,000 feet four of the party had headache and pain in the back, chest and limbs. Only one of the nine Europeans really suffered from mountain sickness. No one had hemorrhage of nose or ears. "Mountain lassitude" prevailed above 20,000 feet. The symptoms of loss of appetite and insomnia rather increased than diminished the longer the party remained very high, and therefore Mrs. Workman does not believe in acclimatization at or above 21,000 feet. Cold is also a very serious deterrent, especially when a person is not wholly "fit." All the party suffered from insomnia, and upon this fact especial stress is laid. A succession of sleepless nights weakens the human frame so that it must become weak and unfit for severe physical exertion. Therefore, Mrs. Workman believes that "when the highest peaks of 28,000 and 29,000 feet are seriously attacked, more will fail through sleeplessness and its effects than from any other cause." The inability to sleep is largely produced by the deficiency of oxygen, but insomnia is designated as "the real mother of altitude symptoms, and more to be dreaded on Everest than mere mountain sickness."

R. DEC. W.

SCIENTIFIC EXPLORATION IN THE PACIFIC.—Mr. William A. Bryan read a paper before the American Association at the Chicago meeting on Dec. 30, in which he told of the organization in Honolulu of a society under the name of the Pacific Scientific Institution, to undertake researches in the Pacific Ocean and among its islands. Attention, he says, will be chiefly directed to ethnology, but geology, physiography, zoology and botany will also be investigated and efforts will be made to demonstrate the part that winds and ocean currents have taken in the distribution of animals, plants and the human race. A vessel is to be specially

equipped for the service of these expeditions, and it is thought that fifteen years may be needed for the work. Mr. Bryan is president of the organization and is said to be the chief mover in it.

The March number of the *American Journal of Science* contains a paper on the evolution of the elephant by Prof. R. S. Lull of Yale University, who uses the word elephant comprehensively to include all of the proboscideans. The paper is accompanied by four charts showing the distribution of this group from Miocene to recent times. Prof. Lull says the African species has a vertical distribution from sea level to a height of 13,000 feet in the Kilimanjaro region. Aridity is a most effective barrier because of its influence upon the food supply and because water is a prime necessity to the comfort of the animal. Thus the Sahara to-day marks the northernmost limit of the African species. Vegetation also constitutes an effective barrier to the proboscideans, especially in the case of the tropical jungle of Central America.

Dr. H. R. Mill has been elected a Corresponding Member of the Physical Geography Section of the Imperial Russian Geographical Society of St. Petersburg.

"L'Almanach du Congo, 1908," published at Ixelles-Bruxelles, Belgium, for the benefit of the Roman Catholic Mission des Falls, Congo Free State, contains much information about the distribution, the activities, and the statistics of the Catholic missions in that State. The large number of children in their schools, the widely extended hospital and dispensary services and the many centres where trades are taught to the young of both sexes, are among the impressive facts in this compilation.

The "Index of Economic Material in Documents of the States of the United States" is now being prepared and published for the Department of Economics and Sociology of the Carnegie Institution. The compilation is in charge of Miss Adelaide R. Hasse, librarian of the Department of Public Documents in the New York Public Library. The volumes for Maine, New Hampshire, Vermont and New York have appeared, those for Massachusetts and Rhode Island are in press and a volume will be devoted to each State of the Union. Students of American economic conditions may thus be assisted to trace the development of any economic subject in the individual States or in the whole country so far as it is reflected in the public documents here indexed.

Prof. W. M. Davis of Harvard University and Prof. A. P. Brigham of Colgate University will lecture on "The Geography of North America" in the School of Geography, which will meet in Oxford University from Aug. 10 to Aug. 28.

Mr. Frank Leverett, of the U. S. Geological Survey, is now in Europe making a comparative study of glacial formations there in connection with the similar investigations in the United States. His observations will embrace the deposits in and around the Alps, in the Scandinavian ice field, and also those in Germany, Russia and Great Britain.

Prof. J. J. Thomson has accepted the invitation of the Council of the British Association to be President of the Association for the meeting to be held next year in Winnipeg.

THE AMERICAN GEOGRAPHICAL SOCIETY.—A Regular Meeting of the Society was held at Mendelssohn Hall, No. 119 West Fortieth Street, on Tuesday, March 24, 1908, at 8.30 o'clock, P. M.

Mr. A. A. Raven in the chair.

The following persons, recommended by the Council, were elected to Fellowship:

Robert Asinari de San Marzano.

Arthur Walbridge North.

Miss Lizzie Van Boskerck.

Arthur Lyman Fisk.

The Chairman then introduced Dr. Roland Dwight Grant, who addressed the Society on the Yellowstone Region, Scenic and Scientific.

Stereopticon views were shown.

On motion, the Society adjourned.

The Council of the Society has unanimously awarded the Cullum Geographical Medal to Prof. William Morris Davis, of Harvard University.

OBITUARY.

ALBERT LANCASTER.—Mr. Lancaster, Chief of the Meteorological Service at the Royal Observatory, Belgium, is dead at the age of 59 years. He was widely known for his published works and especially for the monumental "Bibliographie Générale de l'Astronomie," three volumes of 900 to 1,300 pages each, which he prepared in collaboration with Mr. J. C. Houzeau. In 1880 he founded the periodical *Ciel et Terre*, and the articles he wrote for it would fill several large volumes.

DR. A. W. HOWITT.—Dr. Howitt, author of "The Native Tribes of Southeast Australia" and other important anthropological works, died in Australia on March 8, aged 77 years.

NEW MAPS.

AFRICA.

ALGERIAN SAHARA.—Croquis des Oasis de l'Oued Rir. Scale, 1:100,000, or 1.5 statute mile to an inch. Illustrates "Exposé de la Situation Générale des Territoires du Sud de l'Algérie," by M. C. Jonnart, Governor General, Algiers, 1907.

This black-and-white sketch map distinguishes those oases of the Wadi Rir in which artesian wells were sunk in 1906-1907.

GOLD COAST.—Scale, 1:125,000, or 1.9 statute mile to an inch. Sheets, 72-L-I (Abetife), 73-M-I (Prampam) and sheet 72-Q-III (Tarkwa). Published under

the direction of Major F. G. Guggisberg, Director of Surveys, Gold Coast. London, 1908. (Price, 2s. a sheet.)

Contours are from barymetric heights and are only approximate.

BRITISH EAST AFRICA.—Lumbwa and Sotik. Scale, 1:250,000, or 3.95 statute miles to an inch. Topographical Section of General Staff, War Office, London, 1907.

A reconnaissance survey of the region east and southeast of Kavirondo Gulf, northeast Victoria Nyanza, from the equator to $1^{\circ} 20'$ S. Lat., and between $34^{\circ} 45'$ and $35^{\circ} 30'$ E. Long.

LIBERIA.—Carte du Libéria. Scale, 1:3,000,000, or 47.34 statute miles to an inch. *Bull. Comité de l'Afrique Française*, Vol. 18, No. 2, Paris, 1908.

A good black-and-white sketch map accompanying the full text of the boundary treaty between France and Liberia.

AMERICA.

U. S. HYDROGRAPHIC CHARTS.

Pilot Chart of the North Atlantic Ocean, March and April, 1908.

Pilot Chart of the North Pacific Ocean, April, 1908.

UNITED STATES.—Map of Maryland. Showing the Geological Formations and Agricultural Soils. Scale, 1:500,000, or 7.8 statute miles to an inch. Maryland Geological Survey, Baltimore, 1907.

The map was prepared by the State Survey in co-operation with the U. S. Geological Survey and Bureau of Soils. Colours represent the geological formations and in the legend the soils characteristic of each formation are named.

ARCTIC AMERICA.—Survey of Part of the Mackenzie Delta and Adjacent Region, scale, 1:750,000, or 11.8 statute miles to an inch, by A. H. Harrison; Insets of Baillie Islands, scale, 1:200,000, or 3.16 statute miles to an inch; Herschel Island, scale, 1:150,000, or 2.37 statute miles to an inch; and the Mackenzie River route to the Arctic Ocean. *Geog. Jour.*, Vol. 31, No. 3, London, 1908.

Illustrates a paper by Mr. Harrison on his survey work in 1905-7 in the region of the Mackenzie River delta and the neighbouring sea coasts. Herschel Island is misspelled Herschell. Mr. Harrison's survey gives approximate contours of elevation (aneroid) with 100 feet interval for the eastern and a part of the western portion of the delta. His map corrects a considerable number of errors and adds new facts to the mapping of this region. He gives a list of co-ordinates of 34 places and of compass variations.

PERU-BOLIVIA.—Via de Mollendo á La Paz. Scale, about 1:4,311,000, or 68 statute miles to an inch. *Revista* of the Ministry of Colonisation and Agriculture, Vol. 3, No. 29, La Paz, Bolivia, 1907.

Shows in red the extension of the steam communications now nearing completion between the Peruvian port of Mollendo and La Paz. The existing rail-

road from Mollendo to Puno on Lake Titicaca is utilized—steamers on the lake extend the route to Guaqui on its southern shore, whence the railroad to La Paz is in course of construction.

WEST INDIES.—Sketch Map of Jamaica. Scale, 1:500,000, or 7.89 statute miles to an inch. *Geog. Jour.*, Vol. 31, No. 3, London, 1908.

Illustrates a paper by Dr. Vaughan Cornish on the earthquake of Jan. 14, 1907. Figures scattered over the island denote earthquake intensity according to the Rossi-Forel scale. Areas of damaged buildings, land slides, and subsidence are given.

SOUTH AMERICA.—Stanford's New Orographical Map of South America. Scale, 1:6,000,000, or 94.6 statute miles to an inch. 4 sheets. 52 by 60 inches. Compiled under the direction of H. J. Mackinder. Stanford's Geographical Establishment, London, 1908. (Price in sheets, 16s.; mounted on rollers, 20s.)

This fine series of orographical school wall maps will be completed when Australasia is published. The series includes maps of all the continents and Palestine. The map of South America maintains the high standard of the preceding issues. The simplicity of the colour scheme is one of the best features, only two colours being used, deepening tints of brown for the land and of blue for the sea. It would be desirable if all maps with English nomenclature, intended for popular use, would follow this series in showing all contours of sea depths in feet instead of fathoms so that comparisons between sea depths and land heights (which are always shown in feet) would be easier.

The value of each map is enhanced for school purposes by the admirable summary of the most conspicuous bits of information the map records. It might be wished that the extent of the cataracts of the Madeira River around which Brazil is to build a railroad and which are the only obstacle in the way of uninterrupted navigation between the Bolivian plateau and the Atlantic, had been more completely indicated. Nearly all the nomenclature is very easily read, but is occasionally obscured in the Andean regions.

EUROPE.

AUSTRIA.—Sprachenkarte von Tirol und Vorarlberg. Scale, 1:200,000, or 3.1 statute miles to an inch. By Dr. Richard Pfaundler. *Deutsche Erde*, Vol. 7, No. 1, Gotha, 1908.

Based upon the census of 1900. Shows the percentage of population speaking German or Italian throughout this area.

GERMANY.—Karte der Deutschen Wasserstrassen. Illustrates Deutsche Wasserstrassen und Eisenbahnen by Dr. Thomas Lenschau. Gebauer Schwetschke Druckerei und Verlag. Halle a. S., 1907.

A good map of the navigable rivers and canals of Germany showing water routes now in use, in construction, or projected.

ITALY.—Plan von Rom. Scale, 1:15,000, or 1,250 feet to an inch. *Deutsche Rundschau für Geog. u. Statistik*, Vol. 30, No. 6, Vienna, 1908.

A good map, showing the street plan, railroads, and street car lines. Illustrates Dr. Alexander Olinda's paper "Das moderne Rom."

SPAIN.—Péninsule Ibérique. Scale, 1:7,500,000, or 118.3 statute miles to an inch. Par Jean Brunhes. Vol. 3 (Espagne), in "Les différents systèmes d'Irrigation." Institut Colonial International, Brussels, 1908.

An instructive black-and-white map showing the limits between the dry and humid parts of the Iberian Peninsula and the distribution of steppes and irrigated regions. The volume says that in no part of the world is labour more carefully carried on than in these oases of irrigation.

ASIA AND OCEANIA.

CEYLON.—Colombo in 1904-5. Scale, 4 chains to an inch. 28 sheets. P. D. Warren, Surveyor General. Survey Department of Ceylon, Colombo, 1907.

The map is on a scale so large that most facts capable of cartographic expression are shown. The buildings in red are drawn to scale, water in blue, streets brown. The limits of every parcel of real estate are indicated and all conspicuous buildings, as temples, churches, mosques, schools, manufacturing plants, and steamship landings, as well as public works, such as breakwaters, reservoirs, bridges, ferries, barracks, and playgrounds are lettered. Even private driveways in the grounds of villas are shown. The work is a fine map picture of a great city and is a worthy product of the Survey Department, which has done much in recent years to make Ceylon better known.

DUTCH EAST INDIES.—Banda-Eilanden. Poeloe Roen. Door H. Ph. Th. Witkamp. Scale, 1:20,000, or 0.3 statute mile to an inch. *Tijdschrift* of the Royal Netherlands Geog. Soc., 3d series, Vol. 25, No. 2, Leyden, 1908.

Illustrates an article by Mr. Witkamp. The surrounding reef, anchorages, and sea depths (in fathoms) are indicated. Surface forms are shown by brown contours with 10 meters interval. An inset shows the position of the island with relation to the entire group.

NEW GUINEA.—Schetskaart der Bensbach-river (Torasi). Scale, 1:72,000, or 1.13 statute miles to an inch. *Tijdsch.* of the Royal Netherlands Geog. Soc., 3d Series, Vol. 25, No. 2, Leyden, 1908.

Illustrates a paper by K. M. van Weel. The mouth of the river is on the boundary line between British and Dutch New Guinea. The river is exceedingly tortuous and is deep as far inland as it has been explored.

JAPAN.—Sheets Suzumisaki, Zone 13, Col. X, and Kasada, Zone 1, Col. III. Scale, 1:200,000, or 3.1 statute miles to an inch. Imperial Geological Survey of Japan, Tokio, 1907.

The sheets give excellent cartographic expression of the land forms and other features. Contours of depths along the coast are given at 10, 20, 50, and 100 fathoms. The land contour interval is 40 meters.

PHILIPPINE ISLANDS.—Geological Sketch of Cebú. Scale, 1:400,000, or 6.3 statute miles to an inch. *The Philippine Jour. of Sci.*, Vol. 2, No. 6, Manila, 1907.

Shows the location of coal and metal mines and the distribution of eruptive rocks, nummulitic, tertiary, post-pliocene, limestone, and alluvium.

FIJI ISLANDS.—Geological Sketch Map of Viti Levu. Scale, about 1:348,480, or 5.5 statute miles to an inch. *Proc. of the Linnean Soc. of New South Wales*, No. 127, Sydney, 1907.

A black-and-white map with nomenclature and topography, the geological data being recorded on a transparent sheet imposed upon the map. Illustrates the paper "A Contribution to the Geology of Viti Levu, Fiji," by W. G. Woolnough.

POLAR.

ARCTIC.—Campagnes Scientifiques de la "Princesse Alice" en 1906 et 1907. *Bull. de l'Institut Océanographique*, No. 112, Monaco, 1908.

Illustrates a monograph by Dr. Jules Richard, "Observations de Température des Eaux Marines Arctiques, Faites Pendant les Campagnes du Yacht Princesse-Alice" (1906-1907). The map shows the itineraries from Havre up the Scandinavian Coast and to the west and northern coasts of Spitzbergen, the itinerary and surface temperatures of 1906 being in blue and those of 1907 in red. An inset on a larger scale gives more details of the ice conditions along the coasts of Spitzbergen.

ATLASES.

ATLAS UNIVERSEL DE GÉOGRAPHIE.—Ouvrage commencé par M. Vivien de Saint-Martin et continué par Fr. Schrader. No. 74, États-Unis d'Amérique. en 4 Feuilles. Feuille Nord-Est. Scale, 1:5,000,000, or 78.9 statute miles to an inch. Hachette & Co., Paris, 1907. (Price, 1 fr. a sheet.)

The first sheet of this 4-sheet map of the United States to appear. The scale is so small that in spite of the excellent engraving, the topographic details are not very clear and are too greatly generalized. Fortunately, the atlas presents a map of the northeastern part of the United States (No. 77) on a scale of 1:3,000,000.

ATLAS OF EUROPEAN HISTORY.—BY EARLE W. DOW. 32 Plates, containing over 100 Maps and Index. Henry Holt & Company, New York, 1907. (Price, \$1.50.)

The author is junior professor of history in the University of Michigan. Many of the plates are double-page maps, most of them coloured, but a considerable number are black and white. Prof. Dow has freely used the material in the standard historical atlases, but his own contribution has been very laborious. In his hands the cartographic delineation of European history has been impartially dealt with; he has gone to many original and special sources of information and his index to the nomenclature, filling over 45 pp. and referring to key letters on the map margins, is very thorough. He has produced a scholarly piece of work, which was worthy of better cartographic expression. Most of the plates are utterly devoid of any attempt to show the land forms and contribute little to illustrate the influence of geographical environment upon history. The maps are made by cheap processes, but criticism is disarmed by the fact that the atlas is sold for \$1.50, and it is worth while to have its wealth of material so easily procurable, in the English language, and presented so clearly that there is scarcely any point of obscurity.

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ARCHER, FRANCIS BISSET.—The Gambia Colony and Protectorate. An Official Handbook. (Maps, Plans and Illustrations.) London, St. Bride's Press, Ltd. [1905?]. 8vo. [Gift.]

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BUTTGENBACH, H.—La Cassitérite du Katanga. [With 2 figures.] Quelques faits à propos de la formation des pépites d'or; Les venues métallifères du Katanga. [With 5 figures.] Liège, H. Vaillant-Carmanne. 1906. pr., 8vo. *Extrait des Annales de la Société géologique de Belgique, t. XXXIII, Mémoires.* [Gift from the Author.]

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BUTTGENBACH, H.—Le Gîte Auro-Platinifère de Ruwe (Katanga). [With 5 figures.] Liège, H. Vaillant-Carmanne. 1905. pr., 8vo. 14 pp. *Extrait des Publications du Congrès International des Mines, etc., Section de Géographie appliquée.* [Gift from the Author.]

CRAFFEN, ENRICO, ET COLOMBO, EDOARDO.—Les Niam-Niam. Traduit de l'italien par M^{me}. Jacques Dumas. Paris, V. Giard et E. Brière. 1906. pr., 8vo. (*Extrait de la Revue Internationale de Sociologie.*)

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WEST, LIONEL F.—The Climber's Pocket Book. Rock Climbing Accidents, with Hints on First Aid to the Injured. Some Uses of the Rope, Methods of Rescue and Transport. (Illustrations.) Manchester, Scientific Publishing Co. (1906.) 12mo.

BOOK NOTICES.

Fiji and its Possibilities. By Beatrice Grimshaw. New York, Doubleday, Page & Co., 1907. Pp. xiii, 315, 84 illustrations.

The title adopted for the work by its American publishers (in the English print it is "From Fiji to the Cannibal Islands") is unfortunately misleading through understatement, as well as through arousing too high expectations. Rather less than half the stately volume has to do with Fiji, seven chapters in all. Then, as an agreeable surprise for which the title gives no preparation, come two chapters of general discussion of the present political status of the New Hebrides, four interesting chapters on the unmixed savagery of Mallicolo (for which the author uses Malekula, a variant not yet recognized by Stieler), two chapters on Tanna, with a vivid account of its volcano, and a final chapter on the present condition of Norfolk Island. The economic disquisitions which the title leads one to look for are sadly perfunctory; an expression of surprise that settlement has not yet

advanced into the Fijian mountains, a statement of the satisfactory success made by a trader and his wife in the establishment of a vanilla orchard, a brief mention of cattle raising on Taviuni, and casual references to the sugar plantations.

As to the Fijian used incidentally in the work, one may charitably assume that its lack of accuracy in diction is due to the author's unfamiliarity with a tongue so nicely developed as to make it well worth serious study. But so far as relates to the more serious matter of her treatment of place names, the result is decidedly not a happy one. She has created a problem that should not exist, and then has met it by the attempt to render all names phonetically. Even in this she is by no means consistent with her plan, for we meet Bau side by side on her pages with Thakombau (Cakobau), and if in that monarch's name it seemed necessary to write the M it should equally be necessary in the case of Bau, from which it derives, where the same M is invariably sounded as a preface to the B. Furthermore, the use of TH in representation of the Fijian C is inaccurate, for the true sound is the DH of "that" and never by any possibility the TH of "thin". This phonetic transliteration will be of scant service to those who are familiar with Fiji and the adaptation long since made of the Roman alphabet to its language, and is certain to be a stumbling block to the much larger round of readers who may seek to identify the places upon the really excellent maps of the archipelago, which have been developed upon the cartographic foundation laid down by Wilkes in the United States Exploring Expedition.

The book is so well worth criticism that we have given precedence to the pleading of the advocatus diaboli in order to have it done with. For the rest, the work is a distinct contribution to our knowledge of the New Hebrides as well as of Fiji, to the latter of which we shall confine our comment. Miss Grimshaw has not attempted to compete with Williams and Calvert's "Fiji and the Fijians," which remains as the groundwork of all Fijian ethnologic study, truth in plain narrative with not a trace of appreciation. Next, we find Miss Cumming's "At Home in Fiji," with much show of appreciation, but a deranged appetite for untruth, or, at best, facts disordered. Now comes Miss Grimshaw in this little worked field with a narrative which rings true, and is marked with a wise appreciation of that side of Fijian life which must attract those who come to know this Melanesian race, which has undergone a marked uplift through commingling with Polynesians of a higher culture plane.

One portion of Miss Grimshaw's travel record will be found altogether new, her trip from Ba on the north coast of Viti Levu through the mountainous interior of the Colo country to the Sigatoka River on the south. She was the first white woman to enter that region and the first of the few travellers therein to write a record. We recall that rather more than a score of years ago access to the region was forbidden by the British colonial authorities and that we had to start by stealth. Then as now the traveller among the Kai Colo was met with a happy mixture of innate courtesy and overweening curiosity, and at no time was an untoward gesture made. Miss Grimshaw's narrative of this experience, though brief, is graphic and affords the world at large the first account of conditions in inner Fiji, where the stately and ornate simplicity of free savagery has undergone the least change through contact with European settlement, which is at present a mere littoral fringe. That Colo country in the valleys of lofty mountains is a wonderland of natural beauty, and our author's narrative presents it in its true light, a miniature Switzerland in a hothouse.

The illustrations are an addition to a well-told story; with a rare exception or so they really illustrate, many present the photographic record of scenes and incidents upon which the camera had never before turned lens.

The work worthily finds its place in the slowly growing library of South Sea geography for just what it is, not by any means a definitive monograph, but a vivid reconnaissance of little-known parts of Fiji and the New Hebrides, an interesting sketch record of observation both accurate and cordial. W. C.

Die Wasserversorgung in Deutsch-Südwest-Afrika. Ein Beitrag zu ihrer Lösung auf Grund geologischer, klimatischer und hydrologischer studien. Von Friedrich König. 65 pp., Otto Wigand, Leipzig, 1907. (Price, M. 1.50.)

The geological history of German Southwest Africa shows that the region has undergone many changes of climate. Great lakes and luxuriant vegetation have existed where to-day the lake beds are desert, the whole region is dry, and vegetation is sparse. The author, who is a hydrographical engineer, describes in detail the present conditions and shows that beneath the beds of the streams, which are almost wholly dry except in the rainy season, there is still a large amount of ground water that can be obtained for irrigation by the mechanical means that have been successful in other desiccated regions. Water drills may be sunk in these stream beds with the certainty of finding a supply. Drilling for water between the stream courses will be more largely experimental, though ground water exists there. The author gives many reasons for believing that large areas in German Southwest Africa may be reclaimed by bringing the ground water to the surface.

Doit-on aller aux Colonies? Enquête du Comité Dupleix auprès des Gouverneurs, Commerçants, Colons, etc. 196 pp., Comité Dupleix, Paris [1907]. (Price, 4 fr.)

The Comité Dupleix was organized in 1894 to collect information about the colonial possessions of France, as the nation knew very little about the new territories. The present report deals with emigration to the colonies. Information on this question was collected from Government officials, responsible merchants, engineers, and others who are at the head of important enterprises. Algeria and Tunisia are not included, as they are already the homes of many French colonists and the former is regarded as a part of France.

It will surprise many to learn that the testimony is practically unanimous that the tropical colonies offer no inducement whatever to white farmers and labourers. The general burden of the reports is (1) that the climate is unsuitable for white manual labour and (2) that cheap native labour fully supplies the demand. Most of the colonies also report that the cost of living, as white men should live, is much higher in the colonies than in France. Nearly all say that there are good opportunities for the investment of capital in enterprises that are managed by conservative and experienced men.

Rio de Janeiro. By Ferreira da Rosa. iv and 259 pp., Illustrations, Map, and Index. Edição Oficial da Prefeitura, 1905.

An official account of the city of Rio de Janeiro, including its geography, history, industrial, and commercial development and other aspects. It is handsomely

produced and finely illustrated from photographs. One of the most interesting series of pictures shows the widening of streets, the erection of improved buildings, and a number of views of streets and places before and after improvements had been made.

Au Travers des Forêts Vierges de la Guyane Hollandaise. Par H. van Cappelle. 198 pp., 1 Map, 20 Plates, 60 Illustrations in the Text, and Index. Ch. Béranger, Paris, 1905.

The popular form of this book does not detract from its value as an addition to the works on Dutch Guiana. It is said that railroads are to make the interior of the colony accessible and that much has been done to ascertain what agricultural products will pay to raise. The tendency of freight charges is downward, and it is believed that development will be more rapid in future. Such prospects are likely to stimulate exploration. Dr. van Cappelle explored the Nickerie River and some of its tributaries. His book is full of information about the geography and inhabitants of the interior and gives special attention to natural history, and many of the photographs are very striking.

The Andes and The Amazon. Life and Travel in Perú. By C. Reginald Enock, F.R.G.S. With a Map, Four Coloured Plates and Fifty-eight other Illustrations. Charles Scribner's Sons, New York, 1907.

The numerous illustrations in black in this volume are good, though not always new. The plate facing page 216 and labeled "Lake Titicaca: Temple of Viracocha" reminds one very strongly of a Peruvian illustrated postal card representing the so-called "Temple of Viracocha" at Cacha near Sicuani, more than 130 miles northwest of Lake Titicaca, on the partly constructed railroad line from Puno to Cuzco. Neither the Island of Titicaca nor Tiahuanaco has ruins resembling in any way those represented on the plate. The few coloured illustrations are, with one exception, exceedingly incorrect in outline and colour, as the sketches made by the author invariably are. The map is very good, but there are such discrepancies between some points on it and the text that it becomes plain the author has had nothing to do with this best feature of the work.

It is not worth while to bestow particular attention on the text of the work. In the first place geography does not hold the prominent place; the people past and present rank first in the author's work. Secondly, while there are occasionally some truthful statements and descriptions of the people of to-day, the bulk of what relates to the Indians and their past condition is mainly a compound of conceit, malignity, unpardonable ignorance and specifically British obtuseness and arrogance. For Spain, its people, institutions and their influence the author has nothing but the most silly and brutal abuse.

Geography derives but mediocre profit from the work. Most of what is said that is true is well known. We may except, perhaps, what the writer tells of the country between Huánuco and Huaráz, regions that have not yet been sufficiently investigated. If his altitudes are all as correct as the one given of Sorata peak, 23,760 feet instead of 21,760, as determined by his modest and capable countryman, Sir Martin Conway, they must be models of inexactitude, those excepted which are copied from official surveys. Of the many errors in the book one is particularly entertaining. On page 213, after copying a passage from the unreliable work of Zapata (written in the second half of the eighteenth century),

Mr. Enock says of Tiahuanaco: *this place, I must explain, is the island in lake Titicaca. . .*" The name of the island is Titicaca, and a glance at the map might have told this to the F.R.G.S. On the geology and mineralogy of Peru, in the fields of which a great deal is yet to be done, the book contains considerable information, presumably correct, as it is derived mostly from personal observation. The localities indicated deserve the proper attention of mineralogists and miners.

What is said of the fatal effects of the acquisition of the nitrate fields by Chile upon the ultimate welfare of its people reads much like a sigh at the failure of England to obtain control of them.

A. F. B.

Die Politische und Wirtschaftliche Entwicklung Abessinien's.
Von Professor Dr. C. Keller. 20 pp., Gebauer-Schwetschke, Halle a. S., 1906. (Price, 45 pf.)

An address given by the author, in which he sums up the most important facts relating to the political and industrial development of Abyssinia. A great number of facts are presented in a systematic manner. Keller believes that the future of the country is bright, and he opposes the idea that Mr. Ilg, Emperor Menelik's Minister of State, has any policy except for the best good of Abyssinia, or that he will, as some Germans have asserted, give special favour to French interests in that country.

Dans l'Ouest de La Saoura. Rapport de Tournée par le Capitaine Flye-Sainte-Marie. 164 pp. Comité du Maroc, Paris, 1905. (Price, 2 fr.)

Captain Flye-Sainte-Marie took a company of troops westward from Tuat, and in the four months, from October, 1904, to January, 1905, crossed the Erg or Igidi to Tinduf and returned. The purpose was to learn whether there was any commercial movement in that part of the Sahara and to seek good grazing grounds. Six caravan routes were crossed, but during their march of 1,240 miles the company saw no human beings and only old traces of caravans, proving that trade had been destroyed. This was doubtless due in part to the suppression of the slave trade in the Sudan, which had supplied the slave markets of the Sahara and Morocco. The geographical, geological, and other scientific results of the expedition are given in a series of appendices. The volume makes a noteworthy addition to our knowledge of the Sahara.

Der Aktive Vulkanismus auf dem Afrikanischen Festlande und den Afrikanischen Inseln. Von Hans Simmer. (Münchener Geographische Studien, herausgegeben von Siegmund Günther.) ii and 218 pp., Theodor Ackermann, Munich, 1906. (Price, M. 4.)

The author discusses the theory of vulcanism, and gives much more emphasis to the potency of steam in the production of volcanic eruptions than many writers accord to it. He is also of the opinion that the seat of disturbance in volcanic ebullitions is not very far beneath the surface and that dislocation of the rocks is responsible for the appearance of most volcanic phenomena. With this last idea in view, he devotes 36 pp. to a description of the tectonic disturbances that have been observed on the mainland and the islands of Africa. He finds that these disturbances have been comparatively numerous in the larger part of Africa; that most of the rock dislocations occurred in Tertiary times, and that tectonic move-

ments are not yet at an end. The remainder of the work, 145 pp., is given to a description of the volcanic phenomena as far as they have been observed. He sums up his conclusions in a short chapter, and there is a full index of names.

The following table of active volcanoes may be reproduced here:

AFRICAN MAINLAND.

Active:

- Kirunga tsha Namilagira (Congo Free State).
- Kirunga tsha Niragongo (Congo Free State).
- Teleki (British East Africa).
- Sugobo or Andrew (British East Africa).

Intermittent:

- Dönje Ngai (German East Africa).
- Orteale (Eritrea).
- Dubbi or Edd Volcano (Eritrea).

Activity doubtful:

- Meru.
- Mongo ma Loba or Cameroon Mountain. (The Cameroons).
- Dofane (Abyssinia).

AFRICAN ISLANDS.

Active:

- Kartala (Great Comoro).
- Volcano of Réunion.

Intermittent:

- Fogo (Cape Verde Islands).
- District of Montañas del Fuego (Lanzarote).
- District of Fuencaliente (Palma).
- District of Pico de Teyde (Teneriffe).
- District of Arafo (Teneriffe).

A total of 17 volcanoes or volcanic districts.

The Pulse of Asia. A Journey in Central Asia illustrating the Geographic Basis of History. By Ellsworth Huntington. xxi and 415 pp., 82 Illustrations from half-tones, 4 Maps, Appendix and Index. Houghton, Mifflin & Company, Boston, 1907.

This is one of the best geographical works of the past year. The journey is used throughout to illustrate significant principles of geography. The book is a study of parts of Chinese Turkestan and neighbouring regions in Central Asia as illustrations of the relation between the inorganic physical facts of the earth, air and water on the one hand, and the organic facts of the vegetable, animal and human world on the other.

The view that one of the leading provinces of geography is to show the relations between the organic and the inorganic facts of nature has been held, in its essence, by geographers for many years. Carl Ritter emphasized the idea that geography should largely be a study of the inter-relations between man and his environment. The writings of some of the leading specialists of Europe, as Ratzel, have been deeply influenced by this conception of geography. A conspicuous example is the late Dr. Kirchhoff's *Mensch und Erde*. The inter-action between

geographical environment and the various forms of life was one of the favourite studies of this great geographer. Prof. W. M. Davis, especially in the past three or four years, has spread this view of geography and enlarged its applications in field work. His influence is bearing fruit.

The many facts discovered by Mr. Huntington and other evidence which he discusses show that the present geography of Central Asia is due not to fixed physical conditions, but to changing conditions. His studies give scientific confirmation to the surmise of historians that the climate of certain parts of Asia has been growing more arid. This tendency, however, has not always persisted during the Christian era, for there is evidence that in the Middle Ages there was a tendency towards greater rainfall. The author discovered, also, abundant evidence that the well-being of the inhabitants improved or deteriorated according as the climatic conditions were more or less favourable; and his investigations, during the years he spent in Asia, show that this parallelism between climatic changes and history applies to an area stretching 3,000 miles east and west, from Turkey to China Proper. The fundamental idea of his book is that geography is the basis of history, and he seems fully to have demonstrated that this is the case in Central Asia.

Mr. Huntington has so fully recorded the results of his work and the facts leading to his deductions in the publications of the Carnegie Institution and other scientific societies, that it is not important here even to outline what he did. It is preferred rather to speak briefly of some characteristics of his book and of his methods of treating life and its environment in their inter-relations.

This book should have educational influence, because it is a good example of the best geographical exposition of the time. Some readers may be carried along by the entertaining character of the narrative, the striking facts unknown to most of the reading public, and the novel and interesting conclusions adduced from the array of evidence; but at the same time, consciously or unconsciously, they will get some grounding in the principles of scientific geography.

We learn in these pages the facts that made nomads of the Kirghiz and that tied the Chantos of the plain below them to the soil. The Kirghiz of the Tian Shan plateau live for part of the year at the great height of 10,000 to 12,000 feet above the sea. Their sheep and cattle graze on the rich grasses of these uplands during the short summer; but before the winter snows set in the herds and flocks must be driven for many days down to the protected valleys and the Kirghiz herdsmen must change his residence at least twice a year. His family must go with him, for it is not safe to leave the women and children far away; and the dwellings must be moved much oftener than twice a year, for the best pasturage is always close to the ever-shifting snow line, and when the best grass is eaten, the tents must follow the animals to the next grazing ground.

Thus the geographical conditions compel nomadism, and Mr. Huntington describes in detail the effect upon the inhabitants. Willow sticks and woollen cloth form the tents, for they must be so made as to be easily carried. The furnishings must also conform to the necessities of easy transportation. Utensils are of leather and wood, which will not break. The dress is adapted to the coolness and dampness of the climate. The author gives twenty-seven pages to a most interesting account of the influence of the high plateaus upon the lives and character of their inhabitants.

Far below the plateau is the floor of the Lop basin, and the physical difference

between them has notable consequences in the very diverse human habits and character in the two regions. The environment of the Kirghiz "compels him to travel continually, and he becomes a self-reliant, hardy, adventurous nomad." On the other hand, the Chantos of the Lop basin are farmers, hemmed in by the absolute desert prevailing outside their narrow zone of vegetation. The Chanto's environment "limits him to one place, where patience and steady work bring success and where timidity is no special disadvantage." His modest needs are supplied by a few months' work and there is nothing "to tempt him out of his small oasis, nothing to waken him or arouse determined effort." He has no contact with the world outside his own oasis, and therefore fears whatever is new or strange. In winter he sits idle, with nothing to occupy his thoughts; and eating and drinking and the pampering of his body become the chief things of life. After reading the chapters on the Chantos and their environment, it does not seem surprising that they are submissive, self-indulgent and immoral creatures. They have their virtues, but none of these are of the higher, sterner type.

The photographic illustrations are characteristic and superior, the coloured map is full of well-defined information, and the publishers have made a handsome volume, worthy of its contents.

Lecture des Cartes Russes. Indications Linguistiques, Géographiques et Topographiques. Par le Capitaine P. Pollacchi. 85 pp. R. Chapelot & Co., Paris, 1907. (Price, 6 fr.)

This is the first of a series of small quarto volumes which Captain Pollacchi is preparing with the design of making maps in foreign languages easier to read. The second volume, soon to be issued, will treat of British and American maps. The present book gives a brief description of the most generally used Russian maps and the methods of representing on them the features of the earth's surface; also, the Russian alphabet and its transcription in French; a list filling 56 pp. of terms, symbols, and abbreviations employed on Russian maps, with their meaning in French; a French transcription of Chinese names which the Russians write in their own characters; and tables for the conversion of Russian linear and other measures, weights, etc., into the metrical system. The information is very clearly presented, and map readers with this book may acquire facility in reading Russian maps.

The Eastern Alps. Handbook for Travellers. By Karl Baedeker. xxvi and 573 pp., with 61 Maps, 10 Plans, 8 Panoramas, and Index. Eleventh Edition. Karl Baedeker, Leipzig, 1907. (Price, M. 10.)

Includes the Bavarian Highlands, Tyrol, Salzburg, Upper and Lower Austria, Styria, Carinthia, and Carniola. This is one of the handbooks that have been compiled almost entirely from the personal observations of the Editor, who has repeatedly visited the Eastern Alps within the past few years. The panoramas give a remarkably clear idea of the mountain views from various points of observation.

Egypt and the Sudan. By Karl Baedeker. clxxxiv and 437 pp., 24 Maps, 76 Plans, and 57 Vignettes. 6th Edition. Karl Baedeker, Leipzig, 1908. (Price, M. 15)

This hand-book is founded on the combined work of several Egyptologists and other Oriental scholars. As a guide to the monuments of antiquity the contents are so arranged as to serve the need both of those who have little time to spare and those who are able to give a more leisurely study to these objects. The matter in larger

type gives information essential to all visitors. The smaller type is devoted to a detailed description of the inscriptions, reliefs, etc., to which many travellers can give little or no time. The pages describing the fine temple of Dendera, for example, are thus equally useful to those who must return to the steamer after an hour at the Temple, and to those who can make a more thorough examination. The maps and plans, as usual, are of superior excellence and all have been carefully revised by Prof. Steindorff, the well-known Egyptologist.

Dictionary of the World's Commercial Products. By J. A. Slater.

With French, German and Spanish Equivalents for the Names of the Commercial Products. Second Edition. 163 pp. Sir Isaac Pitman & Sons, London, 1907 (?). (Price, 2/6.)

These definitions seldom refer to the distribution of the various products. They simply tell what the product is, how it is produced, and its chief uses. The information, on the whole, is very accurate, and the book should be useful as a work of reference in the study of commercial geography.

A History of William Paterson and the Darien Company. By James Samuel Barbour. x and 284 pp., 6 Appendices, and 8 Illustrations. William Blackwood and Sons, Edinburgh and London, 1907. (Price, 6s.)

William Paterson, the founder of the Bank of England, was a seventeenth-century forerunner of the twentieth-century promoter, using the word in its best sense. He was a man of great projects and large executive ability, and no stigma attaches to his name on account of the colossal failure of his scheme to found trading and agricultural enterprises on the Isthmus of Panama. He was able to organize companies with large financial backing and to inspire public confidence by associating men of reputation in his schemes. He organized the Darien Company, and possibly its multiplied disasters and tragic collapse might have been avoided if he had been permitted to lead the two expeditions that were sent to the Isthmus.

The book is the history of these ill-starred attempts to establish British colonists in the tropical Isthmus, where both nature and men were hostile. It is a chapter in early colonial enterprise that should be preserved. The whole pathetic record of suffering, caused in a large measure by fatuous mismanagement, is set forth in this volume from official sources.

Round About Jamestown. Historical Sketches of the Lower Virginia Peninsula. By J. E. Davis. Pp. 107, 27 Illustrations from Photographs and Index. Published by the Author, Hampton, Va., 1907. (Price, \$1 cloth, or 50c. paper.)

These interesting historical sketches appeared originally in a magazine, and are worthy of the more permanent form in which they are now presented. They deal chiefly with the early days and development of that part of Virginia lying between the James and York Rivers, and extending from Jamestown to Fortress Monroe, and Miss Davis has written in these pages many excellent descriptions of the life and the record of this part of the country from the cradling of the republic at Jamestown to the terribly tense days of the Civil War, in which the peninsula played so prominent a part. The reader is told, also, of much that he may see to-day that is reminiscent of the earlier times, and of historic events.

Thousands of negro contrabands flocked to the lower peninsula during the Civil War because it was occupied by the Federal troops. For a time the North provided

schools for them, and Gen. S. C. Armstrong, superintendent of contrabands, took special interest in these schools. He finally suggested that Hampton would be a fitting place for a permanent training school for colored teachers, and his idea resulted in the founding of Hampton Institute.

The Great Plains. The Romance of Western American Exploration, Warfare, and Settlement, 1527-1870. By Randall Parrish. 399 pp., 31 Illustrations, and Index. A. C. McClurg & Co., Chicago, 1907. (Price, \$1.75.)

The author claims for the work that it is the first to condense the history of the plains within the limits of a single volume. The compression required has not impaired the readability of the book except in the 39 pages given to exploration. Little more than a bare list and meagre characterization of exploring parties can be attempted in that space. But it is different with the main contents of the book, which deal with incidents of the fur trade, the story of the Santa Fé trail, the prairie schooner, adventures and tragedies on the overland stage lines, the pony express, Indian campaigns, cattle kings, the first railroad, outlaws, and other topics in the history of the plains before they were tamed and brought to order. The author has tapped a rich mine in this story of pioneer times and has written a fascinating book.

The Japanese Nation in Evolution. Steps in the Progress of a Great People. By William Elliot Griffis. xii and 408 pp., 21 Illustrations and Index. Thomas Y. Crowell & Co., New York, 1907. (Price, \$1.25.)

Dr. Griffis presents some new views on the Japanese. Most writers have emphasized the Mongolian and Malayan elements in the race, but he traces the descent of the people through Aryan ancestry and to this fact he attributes their modern success. He aims to show that the Yamato man intermarried with the Ainu and that to-day the white man's blood is in the Japanese "for the better working of his own brain, the improvement of his own potencies and the beautifying of his own physiography." He says the Aryan features in the Japanese mind and body "are plainly discernible, and in thousands of typical instances they are striking." He also asserts that the Japanese are growing taller, having lengthened in a generation over a half inch, as is proved by the measurements for the army of over a million men between 1871 and 1907. He gives examples of the evolution in Japan of Aryan ideas and manual arts; and finds that the evolution from the Aryan was modified by Malayan rather than by Mongolian influences. In fact, he believes the Japanese to be distinctly un-Mongolian. He sees nothing surprising in their recent achievements in peace and war, but regards their advancement as only another stage in their evolution.

It is the steps in the evolution of the Japanese nation that Dr. Griffis describes in this book. His chapters are full of incident, all bearing upon the various stages in history leading up to the nation of to-day. He regards the eventual entrance of Chinese or Mongolian civilization as a calamity, in so far as it "arrested the progress of the language, petrified literary forms and enchained the intellect to an alien past." He shows how the experiences of the past generation or two have revealed both the national excellencies and the limitations of the Japanese; and while he has great faith in the destiny of the nation, he believes that much of their seeming success to day is illusive and disappointing.